





PROCEEDINGS & TRANSACTIONS

OF THE

CROYDON

NATURAL HISTORY AND SCIENTIFIC  
SOCIETY.

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FEBRUARY 18, 1909, TO JANUARY 18, 1910.



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1910.





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THE CROYDON NATURAL HISTORY AND  
SCIENTIFIC SOCIETY.

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1909—1910.

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**Fortieth Annual Meeting,**

*Held at the Public Hall, Croydon, January 18th, 1910.*

The President, JAMES EDMUND CLARK, B.A., B.Sc., F.G.S.,  
in the Chair.

The Council's Report and the Statement of Accounts for  
1909 were read and approved.

The following gentlemen were elected Officers of the Society  
for the ensuing year:—

*President.*—J. EDMUND CLARK, B.A., B.Sc., F.G.S.

*Vice-Presidents.*—BALDWIN LATHAM, M.I.C.E., F.G.S., &c.;

Dr. H. FRANKLIN PARSONS, F.G.S.; W. WHITAKER, B.A.,  
F.R.S., F.G.S.

*Hon. Curator.*—F. GOSSLING, B.Sc., F.C.S.

*Hon. Assistant Curator.*—W. HICHENS.

*Hon. Lanternist.*—J. H. BALDOCK, F.C.S.

*Hon. Assistant Lanternist.*—A. S. WYLDE.

*Hon. Librarian.*—ALFRED ROODS.

*Hon. Assistant Librarian.*—W. L. MOORE.

*Hon. Treasurer.*—F. J. TOWNEND, 29, Woodstock Road.

*Council.*—F. CAMPBELL-BAYARD, F.R.Met.Soc.; T. F. CLARKE;  
C. C. FAGG; STANLEY E. HALL; C. W. RAFFETY; N. F.  
ROBARTS, F.G.S.; ALFRED TARVER.

*(The Assistant Officers are not on the Council.)*

*Hon. Secretaries.*—G. W. MOORE, 15, Dornton Road; T. F.  
CLARKE, "Lurline," Blenheim Crescent.

The following ladies and gentlemen were elected members of  
the Sectional Committees:—

*Anthropological and Archæological Committee.*—T. F. CLARKE, "Lurline," Blenheim Crescent; J. M. HOBSON, M.D., B.Sc., Woodside Court, Croydon; N. F. ROBARTS, F.G.S., 23, Oliver Grove, South Norwood; A. TARVER (Secretary), 7, Stuart Road, Thornton Heath.

*Botanical Committee.*—J. EDMUND CLARK, B.A., B.Sc., F.G.S., "Asgarth," Riddlesdown Road, Purley; P. COCHRANE, 13, Marlowe Road, Anerley; H. T. CROSFIELD, B.A., 49, Coombe Road; Miss K. JEFFRIES DAVIS, B.Sc., 86, Lansdowne Road; C. C. FAGG, 34, Church Road, Upper Norwood; Miss KLAASSEN (Secretary), Aberfeldy, Campden Road; H. T. MENNELL, F.L.S., Red House, Park Hill Rise; W. H. MORRIS, 1, Walpole Road; H. FRANKLIN PARSONS, M.D., F.G.S., Oakhyrst, 4, Park Hill Rise; Mrs. PARSONS, Oakhyrst, 4, Park Hill Rise.

*Geological Committee.*—W. BRUCE BANNERMAN, F.S.A., F.G.S., The Lindens, Sydenham Road; T. F. CLARKE (Secretary), "Lurline," Blenheim Crescent; F. GOSSLING, B.Sc., F.C.S., 15, Birdhurst Road; G. J. HINDE, Ph.D., F.R.S., F.G.S., 24, Avondale Road; H. C. MALE, M.D., Cromer Lodge, 74, Birdhurst Road; G. W. MOORE, 15, Dornton Road; T. K. F. PAGE, Thanet Cottage, Beddington; H. FRANKLIN PARSONS, M.D., F.G.S., Oakhyrst, 4, Park Hill Rise; N. F. ROBARTS, F.G.S., 23, Oliver Grove, South Norwood; W. WHITAKER, B.A., F.R.S., F.G.S., Freda, Campden Road.

*Meteorological Committee.*—F. CAMPBELL-BAYARD, LL.M., F.R. Met. Soc. (Secretary), Cotswold, Wallington; J. EDMUND CLARK, B.A., B.Sc., F.G.S., "Asgarth," Riddlesdown Road, Purley; BALDWIN LATHAM, M.I.C.E., F.G.S., &c., Park Hill House, Stanhope Road.

*Microscopical Committee.*—Miss G. BIGBY, "Frognaal," Bridgefield Road, Sutton; E. AYERST DAVIES (Secretary), 124, Croydon Road, Anerley, S.E.; Miss K. JEFFRIES DAVIS, B.Sc., 86, Lansdowne Road; T. A. DUKES, M.B., B.Sc., 16, Wellesley Road; C. C. FAGG, 34, Church Road, Upper Norwood, S.E.; W. HICHENS, 139, Pemdevon Road, Croydon; J. J. PARKER, 12, Outram Road, Croydon; G. W. MOORE, 15, Dornton Road, South Croydon.

*Museum Committee.*—T. F. CLARKE, "Lurline," Blenheim Crescent; F. GOSSLING, B.Sc., F.C.S. (Secretary), 15, Birdhurst Road; J. M. HOBSON, M.D., B.Sc., Woodside Court, Croydon; H. T. MENNELL, F.L.S., The Red House, Park Hill Rise; H. FRANKLIN PARSONS, M.D., F.G.S., Oakhyrst, 4, Park Hill Rise; N. F. ROBARTS, F.G.S., 23, Oliver Grove, South Norwood; W. W. TOPLEY, 53, Coombe Road; W. WHITAKER, B.A., F.R.S., F.G.S., Freda, Campden Road.

*Photographic Committee.*—J. H. BALDOCK, F.C.S. (Lanternist), Overdale, St. Leonard's Road; H. D. GOWER, 55, Benson Road; R. F. GRUNDY, 8, Havelock Road; J. M. HOBSON, M.D., B.Sc., Woodside Court, Croydon; A. ROODS, 67, Thornhill Road; W. W. TOPLEY, 53, Coombe Road.

*Zoological Committee.*—T. F. CLARKE, "Lurline," Blenheim Crescent; H. T. CROSFIELD, B.A., Walden, 49, Coombe Road; STANLEY E. HALL (Secretary), 17, Dornton Road, South Croydon; W. HICHENS, 139, Pemdevon Road, Croydon; G. W. MOORE, 15, Dornton Road, South Croydon; H. FRANKLIN PARSONS, M.D., F.G.S., Oakhyrst, 4, Park Hill Rise; A. TARVER, 7, Stuart Road, Thornton Heath.



*Council's Report, 1909.*

DURING the past year the progress of the Society has been so far satisfactory that a considerable amount of work has been done, yet on the point of membership there is still a slight falling off, the total now being 131. At our last annual meeting the number returned was 141, but several members resigned as from the 31st December, 1908, subsequently to the drawing up of the Report. We have lost four well-known and valued members by death, *viz.* Mr. W. F. Stanley, J.P., who was our President during the years 1905 and 1906, and had at other times and in many ways been a cordial friend to the Society, of which he was an original member. Mr. Stanley died, deeply regretted, on the 14th August last. We are now further indebted to him, as by his will he bequeathed to the Society, for general purposes, two hundred fully-paid £5 five per cent. preference shares in the Company W. F. Stanley & Co., Ltd., which was founded on the business he had built up. The transfer of these shares into the names of the representatives of the Society has not yet been effected, but we have a letter from one of the executors stating that this will be done after the payment of the dividend up to the 31st December, when the proportion due to the Society from the 14th August will be paid, and that they will then be prepared to transfer the shares into the names furnished by us. This generous bequest relieves the Council and members of considerable anxiety as to our financial position.

We much regret to announce also the death, on the 30th November last, at Bath, of Mr. Kenneth McKean, F.L.S., also an original member, and the second Hon. Secretary and Treasurer, in which post he succeeded the late Mr. Henry Long. Mr. McKean was also joint Trustee with Mr. H. T. Mennell, F.L.S., of the Second Special fund invested in Consols mentioned in the Accounts, and it now becomes necessary for us to nominate new Trustees. Mr. McKean, until he left Croydon some years ago, had been a very active member, and had contributed a great deal to the Society's reports. He was also active in support of the project to found a Museum for Croydon, and lent a valuable Collection of Shells to our case at the Town Hall. Unfortunately, having left Croydon some years, he was not so well known to many of our present members. During his membership he was for some years away in India.

Another of our earliest members, Mr. W. H. Beeby, F.L.S., F.R.M.S., died at Thames Ditton on the 4th January, this

year. Mr. Beeby joined the Society in 1871. He was well known as an authority on botany, and had contributed papers to the Society on botanical subjects. He was recently engaged on, and had collected, materials for a new work on the Surrey flora, which he was not able to complete, and this has now been taken up by a former member of ours, Mr. C. E. Salmon, F.L.S., of Reigate.

Mr. Alderman Rymer, also a member, died during the spring of last year.

In addition to the sad losses recorded, there have been nine resignations during the past year, against which we have eleven new members, leaving our total 131, as already mentioned.

The work of the Sections has been in most cases excellent, and members who can and will attend the meetings announced will find that on all occasions very interesting matter has been provided.

The ordinary meetings have been well attended and, compared with some larger and perhaps more prominent societies, our attendances may be regarded as decidedly good.

The thanks of the Council and members are given to all who have contributed to the general work of the Society during the past year, in giving papers, conducting sectional meetings and excursions; also to friends who assisted at the successful Social Evening held on 7th December, and to the Auditors of the Accounts.

Particulars of meetings, excursions, and sectional meetings will be given in the 'Transactions.'

### *President's Address.*

LADIES AND GENTLEMEN,

Again the time has come when we must take stock of our position at the close of the year, the thirty-ninth since the Society was founded. We enter on our fortieth with a membership of 131. Of the four members whom we have lost through death, two were original members, so that now only two are left out of the 127, namely, my predecessor in this chair, Mr. Baldwin Latham, and Mr. W. J. Blake.

As we have heard, Mr. W. F. Stanley passed away on August 14th last, at the ripe age of seventy-eight years. He filled the presidential chair so lately as 1905 and 1906. There is, therefore, no need to dwell upon his personality, which is familiar to us all, nor upon the courteous urbanity with which he discharged the duties incumbent on him.



Throughout all our history he has been one of our most active members. His two latest papers appear in our 'Proceedings' for 1902 and 1904, dealing, respectively, with Egyptology and "The Economy of Growing Canadian Poplars on Waste Lands for the Manufacture of Paper." Moreover, our much esteemed Secretary, in his report, has told us of the further benefit for which our Society is indebted to him. By this we are associated with the firm of W. F. Stanley and Co., the world-famed manufacturers of mathematical instruments, founded and built up by his genius and business capacity.

The right application of this munificent bequest will engage the most careful attention of the Council whom you have this evening elected for the coming year.

It was not my fortune to be personally acquainted with Mr. K. McKean, F.L.S., but our fellow-member, Mr. Edward Lovett, a friend of his for thirty-eight years, has kindly given me information too valuable to be lost. In 1874 he succeeded Mr. Long as Hon. Secretary, but three years later went to Madras, being then made an honorary member. He paid special attention to British land and freshwater molluscs and to photography. On the former he contributed various lists of local species to our 'Transactions,' and made a practically complete collection, devoted largely to our own county. This still exists in his house at Bath. Mr. McKean's great care and neatness in its preparation has added beauty to the inherent value of such a collection, especially for the county of Surrey.

One of the most active originators of the Photographic Section, he soon took first rank among the Croydon amateurs of the eighties, and was generous in letting others benefit by his skill. Mr. Lovett concludes: "I never heard him say that any of his work was 'good,' but he always wanted to do better. Last December 3rd, when I went to his funeral, I saw some of his last photographs, taken about three or four months ago. They were the best he had ever done!"

Mr. W. H. Beeby, F.L.S., F.R.M.S., though not an original member, was elected within the first year of our existence, on March 15th, 1871, when twenty-one or twenty-two. He next year won the very rare honour of adding two new species to the British Flora,\* the fact being announced as an original communication to one of our meetings. These were *Juncus capitatus* and *pygmaeus*, which are still known only in the Cornish locality where he discovered them, and so remain the rarest of the genus in our isles. At the same meeting he reported an addition to the Surrey flora, *Enanthe Lachenalii*, found by him

\* See pp. 6 and 22, 23, 1872 Report.

and Mr. Bennett on Mitcham Common, though previously only known on coastal salt marshes. This also remains as the sole county record, though now known also from a few other inland counties.

So late as 1908 we were indebted to him for his paper in the 'Botanical Journal' on "The Scape of *Taraxacum*."

The various reports to be received present a situation containing many points of encouragement. The attendance at our meetings has been above the average of recent years, and the work done in the sections most satisfactory. Two causes account, probably, for the decrease in membership in recent years—chiefly the immense growth of other engagements, but also the constantly increasing distance from our Club Room at which our constituency resides. Ten years ago our membership was 229. At the close of 1904 it was 201; of 1907, 176; 1908, 141; this year, as we said, it is 131, still five more than that given in our first Report. Such changes are most regrettable, but would be far more so had it been associated with any serious decrease in the attendance or interest of our gatherings, or the value of the communications.

The fact that we have now entered the last year of the first decade of the new century makes this a suitable time to consider the directions in which advances in natural science have been specially conspicuous. It has seemed to me that, in the subjects affecting ourselves, three are worthy of special attention, pertaining, respectively, to the fundamental properties of Matter, the engrossing biological problem of Heredity, and the successful exploration by meteorologists of the upper air. Radium and Mendelism express the two former, each in a single word. The present opportunity will, however, barely suffice for the briefest consideration of one out of the three, and it may be the best course to deal here with that one most closely associated with a Natural History club.

All three subjects had their beginnings in the previous century, but in each case that barely saw more than their birth.

Abbot Mendel had, we shall remember, announced in 1865 his epoch-making discovery, but it fell so altogether on deaf ears that the matter passed entirely out of memory. The reason is not far to seek. Philosophers, as well as naturalists, were still engrossed in the mighty struggle raging round the actuality of Evolution as presented to the world by Darwin, and by Wallace, who was associated with our early days. The consequences of variation so far transcended in this battle of the giants the underlying question of its *reason*, that the latter was practically ignored. When, therefore, the Austrian monk



gave to the Natural History Society of Brunn the far-reaching results of his experiments with garden peas, the world was little the wiser.

Thus it lay hid for a full generation, until at last it was unearthed by Prof. Hugo de Vries, of Amsterdam, in whose hands, assisted by many able co-operators, notably Prof. Bateson, of Cambridge, the subject has rapidly been placed in the first rank, and Mendel exalted to a possible equality with Darwin.

To make Mendel's discovery comprehensible in a few words is no easy task. His paper deals with his conclusions from cross-fertilising garden-pea plants with marked contrasts, such as tall and dwarf habit, smooth and wrinkled seed, grey and white seed-coats, &c.

It may help first to consider where biology stood ten years ago. Darwinian evolution through "survival of the fittest" in the case of variations had long been fully accepted, although not a few of Darwin's arguments were held to be less conclusive than had been once supposed. Thus Darwin's theory of Pangenesis is no longer admitted. Weismann, especially, has helped to throw doubt on the cumulative inheritance tendency of small advantageous variations; this in direct opposition to the views of Herbert Spencer, but following in the steps of Alfred Russel Wallace. Indeed, Weismann declared it to be impossible, after it was practically proved (largely by his own labours), that the germ-cells, through which alone child succeeds to parent, descend in direct continuity from generation to generation. The body is formed from part only of the germ-cell that it may be the host of the remaining portion, of which it is merely an offshoot. As Wilson has put it, "as far as inheritance is concerned, the body is merely the carrier of the germ-cells, which are held in trust for coming generations." The body, it has been cleverly said, is but their elder brother.\*

Later investigations, however, throw doubt on this impossibility. Sedgwick points out that neither in plants nor in animals are the cells like closed boxes or watertight compartments. On the contrary, most biologists now believe in a continuity of the protoplasmic network throughout the organism, with possibilities of universal communication, whereby, for instance, chemical or physical products, associated with the enlargement of a set of muscles by exercise, may affect the substance of the germ-cells. In a word, however, though the evolution of a species by such cumulative minute variations is

\* P. 68, Lock's 'Recent Progress in the Study of Variation, Heredity and Evolution,' to which book the writer acknowledges his indebtedness. A capital summary of the whole subject of heredity is given in the one-shilling "Jack's Scientific Series," by C. W. Saleeby.

not impossible, no case has yet been proved. On the other hand, there is full proof that specific differences have in some cases arisen *per saltum*, and it is evident that such sudden jumps are not due to the inheritance of acquired characters. The explanation of it is one of the enigmas solved by the application of Mendel's Law, to which we thus return.

This law has for its fundamental thought the inheritance of certain definite, contrary characters, which are therefore called allelomorphs, a word that practically means, "opposite forms." Such, in Mendel's garden peas, were tallness and dwarfness, smooth seeds and wrinkled, grey coats and white, &c. These contraries are called by the letters A, a; B, b; C, c; &c. Each of these is present in the cell in pairs, either AA, Aa, or aa, for each allelomorphic quality.

Now the fertilizing cell or pollen grain and the germ-cell or ovum each contain invariably half the number only of certain bodies, called chromospheres, found in the other growing cells of the organism, the number being invariable in a given species.

Hence the embryo, formed by the union of the two, again contains no more and no less than the normal number of chromospheres, half being contributed by each parent cell. The essential point for Mendelism is that, with the reduction of chromospheres, the allelomorph pairs are also divided, one taken, the other left.

I. Hence, if we fertilise AA by AA, or aa by aa, there is no change.

II. \* If  $AA \times aa$  we get Aa, as first generation.

III. If  $AA \times Aa$  we get AA and Aa.

If  $aa \times Aa$  we get aa and Aa.

But in the second generation—

IV. If  $Aa \times Aa$  we get AA, aA, Aa, aa, the second and third being identical.

The above were all proved by Mendel's experiments, and yet the proof is not simple.

Let us illustrate by height allelomorphy:—

I. Mendel found that, by crossing tall and dwarf peas, AA and aa, the progeny, Aa, were all tall.

II. By crossing this hybrid with tall peas, the result was again tall peas only [ $Aa \times AA$  gave  $AA + Aa$ ].

III. Crossed with dwarf peas half were tall, half dwarf [ $Aa \times aa$  gave  $Aa + aa$ ].

It is therefore evident that the hybrids, for some reason, were all like the tall parent in respect to height.

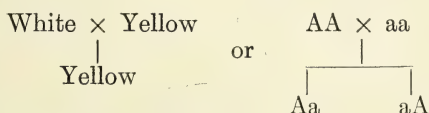
\* The sign  $\times$  stands for "is fertilized by," the latter letter or name standing for the male element.



IV. Further, and for the same reason, on intercrossing the hybrid plants Aa, the result in the next generation ( $F_2$ ) was 75 per cent. tall and 25 per cent. dwarf [ $Aa \times aA$  gives  $AA + Aa + aA + aa$ ].

There is evidently something further to explain, and experiment has given a simple solution.

It constantly happens that one of the pair of qualities, say A, is far more assertive than the other, a. Such a one is called *dominant*. Evidently in garden peas "tallness" dominates "dwarfness." Thus, again, in Indian corn, the yellow endosperm is "dominant" over the "recessive" white. Hence a female white-seeded flower, fertilized with pollen from a true yellow-grained plant, always gives yellow grains:—



The seeds, therefore, from such a cross are yellow, and yet, in possibilities, they are very different from their yellow-seeded parent, just as we saw was the case also with the garden peas. For if, now, we take such a (yellow × white) hybrid seed of maize, Aa, and fertilize its "tassels" with pollen, aa, from a white-seeded plant, ovules will result having the combinations in equal quantities Aa and aa, the former giving again yellow seeds. In an actual case of ninety-five plants producing 53,543 seeds, the difference between the totals was forty-one seeds only, or a difference of 3 in 10,000 between theory and fact.

Note, now, the results. In the white grains we have like allelomorphs, the recessive aa. This half of the stock, therefore, on interbreeding breeds true, giving white crops only. Had the yellow grains, similarly, contained only the dominant allelomorphs, AA, crops from them would have given yellow cobs only in following generations. In *appearance* there is nothing to show that they are not such. But if, now, we cross two of our yellow grains, Aa or aA, the result of this generation comes out in cobs with 75 per cent. yellow and 25 per cent. white grains, the same proportion as in  $F_2$  of the garden peas. Taking such a mixed cob for another generation, we find the fresh plants are of three kinds. One set has cobs of white grains only which breed true together; a second of yellow, also breeding true; but the third, as numerous as the other two together, though it has also yellow grains, if self-fertilized, will give mixed grains once more, in just the same proportion and of the same properties as the previous generation.





Similar results follow when, instead of colour, shape is taken (smooth or wrinkled), or height of plants or other allelomorphic possibilities. We are thus able to select out seeds breeding true dominant and true recessive types, and to combine one set with another at will.

Thus we get the most important fact that, by such crossing, latent characteristics, entirely distinct from those seen in either parent, may appear at a single bound. More than this, any number of such allelomorphs can act in unison.

One of the most striking illustrations of this occurred in an early experiment with the white sweet pea "Emily Henderson." Prof. Bateson and his Cambridge investigators found that there were two types, one with long pollen grains, the other with round. The normal sweet pea is almost invariably self-fertilized\*; hence these two kinds kept distinct. But the cross-bred form "threw back" to the old-fashioned "Purple Invincible," perhaps the original type, having a purple standard and blue wings. The seeds from these, when in turn self-pollinated, gave *five* well-known varieties in the following proportions out of 256 plants:—

Purple Invincible	...	...	81	} or 3	1	} of 256 plants.	
Picotee	...	...	27				
Painted Lady (Red and White)			27	} 3	1		
Tinged White	...	...	9				
White...	...	...	112	(16)—			
			(144)—				

Now Mendelism is able to give an explanation of these extraordinary results, which is simple though more complex than the previous illustration, because we start with at least two allelomorphisms instead of one. It may be put thus:—There is in each form of the white originals a colour factor, say C and R respectively, which on uniting to CR produce coloured flowers, but separately have no effect. Call the absence of colour in each c and r, thus giving the two allelomorphs Cc and Rr. Taking first the question of the coloured flowered plants in the first generation, all must contain both C and R. Therefore all are coloured.

In the second generation we find that, on cross-fertilization, we have sixteen possible combinations, thus:—

\* This appears to be less true of the Countess Spencer type.

	C R	c R	C r	c r
C R	C R C R	c R C R	C r C R	c r C R
c R	C R c R	c R c R	C r c R	c r c R
C r	C R C r	c R C r	C r C r	c r C r
c r	C R c r	C R c r	C r c r	c r c r

Flowers from unions where we get both C and R will be coloured, and these are nine out of the sixteen, the precise proportion in the experiment. No wonder that, when such verifications are possible, confidence in Mendel's Law as an expression of realities is great!

But, so far, the question has been simply between coloured blossoms and white. Why are there four types of the former?

The explanation consists in calling in two other pairs of allelomorphs, Bb, Tt. We have already seen that there is no limit to the number of such pairs that may be present together. Longness and shortness, wrinkled and smooth seeds, white and yellow endosperm, &c., though we must consider them separately, can be present indifferently, together or apart. The pair Bb stand for the presence or absence of blueness in flowers otherwise red, present in Purple Invincible and Picotee, absent in the red-winged Painted Lady and its paler copy, Tinged White. Tt govern the depth of colour, the presence of T giving us Purple Invincible and Painted Lady. It must be remembered that B and T are potent only in the presence of



both C and R. The range is from CRBT to crbt, each of which extremes appears but once amongst the 256 possible permutations, and *these two alone*, on being crossed by their like, will result in progeny all true to type. Here we may again make some deductions.

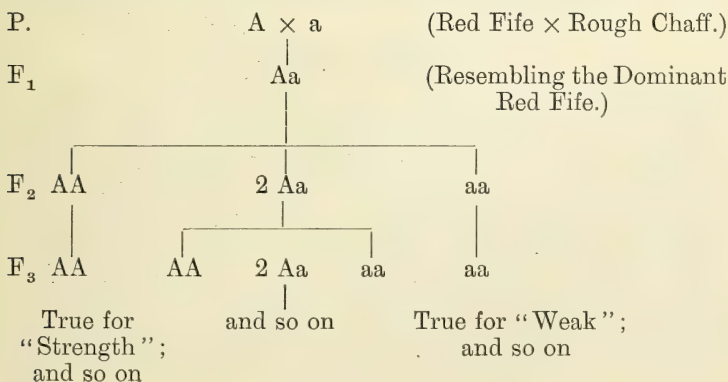
First, we easily understand the difficulties in *fixing* fresh varieties, and yet the *certainty* attendant upon patient and skilful perseverance.

Secondly, the fact that it is possible to fix, in the same individual, more than one selection from allelomorphs opens the vista for invaluable possibilities. What the gardener and breeder have hitherto groped after blindly can now in many cases be planned out and developed under guidance of scientific laws.

One of the earliest and most famous illustrations was that with wheat by Mr. Biffen at Cambridge. Let us briefly state that the ideal grain must be prolific, early-ripening, "rust-proof," and have "strength." "Strength," a quality essential to saleable English bread, is unfortunately absent from our indigenous strains, for which reason American and Canadian grain, rich in strength, fetch higher prices in the market. When these are home grown, the "strong" American grain either grows "weak" or produces much less to the acre than the native grain—a serious matter on our expensive land. Such is a kind called "Red Fife." Very appropriately in the allelomorph "strong" and "weak" the former is dominant.

His first step was to cross this dominant in Manitoba "Red Fife" with the prolific English "Rough Chaff," a grain possessing many excellent qualities, but with "strength" recessive.

Taking Aa to stand for the strength allelomorph, he got the usual results:—



We must now recall that the same grains at the same time were inheriting other qualities from the parent stock, combined in various ways with that of strength. The other stages, therefore, consisted of selecting such "strong" grains as contained the other desirable qualities. For instance, on sowing a batch, some developed a much heavier crop than others. These of course were easily selected out and bred true for prolificness; in exactly the same way, by crossing with a rust-proof grain, he has obtained a strain exhibiting the three ideals aimed at of strength, prolificness, and rust-immunity. It is interesting to note that, while the first and second qualities result from dominant allelomorphs, rust-immunity is recessive. This is proved by the second generation producing 75 per cent. of rust-susceptible and only 25 per cent. of immune plants.

So much was accomplished in three generations. In a fourth, the further excellent dominant allelomorph of "earliness" was superadded.

The above case illustrates again one of the chief essentials in the application of Mendel's Law, that the case of each pair of allelomorphs must be, and *can be*, dealt with separately. In doing this, the fact must not be overlooked that in each germ the theoretical number of allelomorphs present is practically unlimited.

It has been possible to enter only upon the threshold of this supreme discovery, which in a short ten years has revolutionized the whole field of biology, and has already accomplished far-reaching results in the garden and the farm. What the near future has yet in store for mankind we will not prophesy, but, apart from its profound import for biological theory, there are many who look for practical results from this discovery second to none that have flowed from the greatest inventions, such as the steam-engine and the dynamo, in their utility to mankind.

### *Obituary Notices.*

WILLIAM FORD STANLEY, J.P., F.G.S., F.R.A.S., &c.

THE death of Mr. W. F. Stanley, on August 14th, 1909, deprived the Society of one of its few remaining original members, he having joined when it was first formed as the Croydon Microscopical Club in 1870, and thence onwards he always took a keen interest in promoting the aims of the Society. He was a direct descendant of Thomas Stanley, historian of Greek Philosophy, and translator of Æschylus, who died in 1678. In his early life Mr. Stanley took great interest in literature and science, especially in the two branches of the latter, astronomy and geology, while he was also a good botanist, and interested himself in the



growth of rare plants. From his father he obtained an insight into mechanical engineering and instrument-making, which enabled him to start in business in 1854 as a scientific and optical instrument-maker, thus laying the foundation of the business—now Stanley & Co., Limited—in which he was eminently successful, both as an inventor and constructor. Mr. Stanley was a member of the Geological, Royal Astronomical, Physical, and Royal Meteorological Societies, and the Anthropological Institute, and contributed papers to most, if not all, of these. He was the author of a work on Fluids, much praised by Professors Tyndal and Darwin. He also wrote a book on the Nebular Theory, besides technical works on Surveying and Drawing Instruments, which became text-books; while a lighter work, styled ‘Utopia,’ betokened his interest in social and political life. He will probably be best remembered in the neighbourhood of Croydon and South Norwood, where he lived for many years, as the builder and donor to South Norwood of the Stanley Hall, and the founder of the Stanley Technical Trade Schools, South Norwood Hill, where his advanced and sound ideas on technical education were carried out by him both in theory and practice. In addition to defraying the heavy cost of the buildings mentioned and the endowment of the schools, Mr. Stanley acquired a building suitable for a polytechnic in South Norwood, which he transferred to the Croydon Corporation at its original cost. Mr. Stanley’s connection with the Society, and his Presidentship in 1905–06, also his generous bequest to the Society, have been further alluded to in the Presidential Address and Council’s Report, read on January 18th.

Mrs. Stanley has been offered and has accepted an honorary life-membership of the Society.

[Dr. R. L. Pinkerton, of South Norwood, one of our members, kindly contributed the particulars for this notice.]

#### W. H. BEEBY, F.L.S. F.R.M.S.

MR. W. H. BEEBY, who died on January 4th, 1910, though not known to many of our present members, was one of the earliest to join the Society after its formation as the Croydon Microscopical Club in 1870, *viz.* on March 15th, 1871. Though chiefly known through his botanical work in connection with such far distant parts of the country as Surrey and the Shetland Isles, where he discovered sixty plants new to the district, he was also an expert microscopist, and a Fellow of the Royal Microscopical Society. He was elected a Fellow of the Linnæan Society on June 5th, 1890. His collection of Surrey and Shetland plants will shortly (by his express wish) be placed in the

Museum founded by Mr. A. O. Hume, and will thus be accessible to students. Mr. Beeby was considered one of the most accurate of British botanists. Reference is made to Mr. Beeby and his work on the Surrey Flora in the President's Address. Contributions by Mr. Beeby appear in the List of Donations, p. xxviii.

[The Rev. E. S. Marshall, of West Monckton, Taunton, kindly sent particulars for this notice.]

KENNETH MCKEAN, F.L.S.

(See President's Address and Council's Report.)

### *Summary of Proceedings.*

#### EXCURSIONS.

*April 7th* (half-day).—To the School of Mines, Jermyn Street. Conductor, Dr. H. Franklin Parsons, F.G.S.

About ten members assembled, and were met by Dr. A. J. H. Teale, who explained the working models, especially one of the London Area, a new model designed in sections so as to show the relation of underlying strata; also one of the Scotch Highlands, on which the overthrust of the older beds was shown. Geological photographs of Highland and Devonian scenery were also shown. Dr. Teale also explained the formation of china clay in Cornwall (St. Austell) by the decay of the granite, due probably to the permeation of acid fumes from below, and not, as hitherto thought, to weathering from above. Dr. Teale then took the party to the Upper Gallery containing the mineral collection, giving much information regarding the formation and constituents of many of the specimens.

*May 1st* (half-day).—Kew Gardens. Conductor, Miss Klaassen. (See Botanical Section Report.)

*May 15th*.—Brasted, with Geological Association. Conductors, Mr. W. Whitaker, F.R.S., and Mr. C. C. Fagg. (A report of this will be found in the 'Proceedings' of the Geologists' Association.)

*May 31st* (Whit-Monday).—Whole day. Tunbridge Wells.

Owing to illness, Mr. G. W. Moore, who had arranged to conduct this excursion, was unable to go. Very few attended, and Mr. K. P. Keywood has kindly sent the following note:—

"Arrived at Tunbridge Wells under a hot sun, which continued throughout the day. Mr. N. F. Robarts and I first visited the Toad Rock; we then went on to the High Rocks,



where I obtained a male and female of the small engrailed moth (*Tephrosia crepuscularia*, Hüb.), which were settled on a tree-trunk. On leaving the High Rocks we walked to Groombridge, the following Lepidoptera being noticed *en route*:—Common blue (*Polyommatus icarus*) and small Heath brown (*Cænonympha pamphilus*) butterflies seen plentifully. Large and small cabbage white butterflies (*Pieris brassicæ* and *rapæ* respectively) were abundant. Numbers of male orange-tip butterflies (*Euchloë cardamines*) were seen. One pearl-bordered fritillary (*Argynnis euphrosyne*) in good condition was taken. On the borders of a pine-wood which adjoined the road two Mother Shipton moths (*Euclidia mi*), one small purple-barred moth (*Prophygnia viridaria*), and one Bordered white moth (*Bupalis piniaria*) were taken. On the road from Groombridge to Ashurst, and in the woods and fields adjoining, green plover (*Vanellus cristatus*), wood-pigeons (*Columba palumbus*), and a kestrel (*Falco tinnunculus*) were seen. A number of larvæ of the small tortoiseshell butterfly (*Vanessa urticæ*) were taken from a patch of stinging-nettle growing in a field adjoining the road. Two pearl-bordered fritillaries (*A. euphrosyne*) seen. Only one female of the orange-tip butterfly (*E. cardamines*) seen, although the males were in some plenty. The common blue (*P. icarus*) and small Heath brown (*C. pamphilus*) butterflies were still exceedingly common. From Ashurst to Cowden the males of the orange-tip butterfly were still noticed commonly. Several specimens of the speckled yellow moth (*Venilia macularia*) were seen. The larvæ of *Hibernia defoliaria* were exceedingly common on oak and other trees everywhere. Although a large number of trees and plants were noticed in blossom, I only took notes of the following common species, *viz.* hawthorn, horse-chestnut, Scotch fir, gorse, furze, primrose, wild hyacinth, common yellow and water ranunculus, stitchwort, yellow dead-nettle, and clover."

June 12th.—West Clandon and the Silent Pool. Conductor, Mr. G. W. Moore.

Only the Conductor and the Hon. Treasurer, Mr. F. J. Townend, went, the afternoon being very wet. Mr. Townend succeeded in getting a good photograph of the Silent Pool during a bright interval. The water in the Pool was fairly high.

June 26th.—Reigate. (See Geological Section Report.)

July 10th (half-day).—Morden Park, Haliloo Valley. Conductor, Mr. H. T. Mennell, F.L.S. (See Botanical Section Report.)

*August 2nd* (Bank Holiday).—Whole day. To Tongham, the Hog's Back, Waverley Abbey, and Farnham. Conductor, Mr. C. C. Fagg.

Owing to the wintry weather and heavy rain at the time of starting only a very small number turned up for this excursion. As the party left Ash Station, however, the sun came out, and the few who had ventured were rewarded by a most interesting and enjoyable ramble. Geologically, the outward route traversed all the rocks from London Clay to Lower Greensand, and the flora was seen to change with the formations. From Tongham the road to the top of the Hog's Back passes through a fine avenue of elms. Near the top a small quarry in the Upper Chalk with flints was visited, in which the strata dip at an angle of over 60°. Some very late eggs of the drinker-moth were found near by. Among the butterflies noted were the large heath, purple hairstreak, small tortoiseshell, red admiral, and grayling. Some of the more interesting flowers noted were, on the Lower Greensand, *Epipactis latifolia* (flowers just opening), *Listera ovata* (flowers almost over), *Cynoglossum officinale* (in fruit in pine-woods), *Symphytum officinale*, *Valeriana officinalis*, *Sedum reflexum*, *Trifolium scabrum*; and, by the Wey in Moor Park, *Iris pseudacorus*, *Scrophularia aquatica*, and *Veronica anagallis*. On the walls by Mother Ludlam's Cave, in Moor Park, the curious foliose lichen *Peltigera* was growing and fruiting in abundance. Waverley Abbey, Moor Park, and Farnham Castle were visited *en route*, as of great historic interest. Waverley Abbey is a magnificent ruin, and has the additional interest of being the first Cistercian Abbey in this country (1128). Moor Park was the residence of Sir William Temple. It was here that his secretary, Swift, met Stella, and wrote several of his works.

There was not time to see much of Farnham Castle. In its grounds the large number of fallow deer with their tiny young ones formed a pleasing spectacle.

*September 18th.*—Fungus foray, Devil's Den Wood, Farthing Down. Conductor, Dr. H. Franklin Parsons F.G.S. (See Botanical Section Report.)

#### BOTANICAL EVENING RAMBLES.

*May 20th.*—Wimbledon Common. Conductor, Dr. H. Franklin Parsons, F.G.S. (See Botanical Section Report.)

*June 17th.*—Chipstead Valley. Conductor, Mr. H. T. Mennell, F.L.S. (See Botanical Section Report.)

*July 15th.*—Banstead Downs. Conductor, Mr. J. E. Clark, B.A., B.Sc. (See Botanical Section Report.)



EVENING MEETINGS.

*February 16th.*—The Reports of the Meteorological and Botanical Committees were read.

*March 16th.*—Lecture by Mr. Stephen Paget, F.R.C.S., Hon. Secretary of the Research Defence Society, on some "Recent Discoveries in Medicine."

*April 2nd.*—The Hon. Secretary read a note on "The Recent Excavation of a Shaft at Beddington Brickworks":—

"Though the find at the Beddington Brickworks, of which Mr. Jesse Clack sent me notice at the beginning of December last year (1908), does not promise to be of surpassing interest from an antiquarian point of view, I thought it better that we should have some record of it, and therefore prepared a short note.

"Some years since—Mr. Clack cannot say exactly how long—he had occasion to clear away the upper portion of the soil and sand (Thanet) to a depth of about eight feet, and came upon what appeared to be the circular head of a well, situated at the south-east corner of his works. He has been unable to trace any records or knowledge of its existence. In order to preserve the head Mr. Clack had two layers of bricks placed round it, but did not then continue working. Subsequently, a year or two since, he made some further investigation, but was compelled to relinquish it, and it was only last November that any serious attempt at investigation was made and actual excavation carried out. The result was that a circular shaft was found, 3 ft. 9 in. wide, lined with courses of chalk, cut with fair regularity into chalk-sets, and laid very evenly but uncemented. At a depth of about fifteen feet a cavity was found, but further down the shaft was again filled up. The clearing out was continued to a depth of forty-eight feet, to the base of the Thanet Sands, and here the width of the shaft increased to 4 ft. 6 in., still lined with chalk, but below this the walls rested upon the chalk underlying the sands; and the shaft opened out into a chamber, which was filled up with earth and bones to a further depth of possibly twenty feet. The total depth from which remains have been brought up is sixty-two feet. The bones turned out consist of horse, ox, goat or horned sheep, pigs, dogs (various kinds, large and small), cat, and two skulls of deer, one probably a fallow-deer, and the other larger, with portions of antler attached. A few fragments of tiles (very rough), a small portion of a pot with a handle, and a glass fragment, apparently of an ornamental nature, very iridescent, and a piece of iron that may have been an ox-shoe were also found.

The glass and the handled fragment of pottery are now at the British Museum for examination. The condition of the bones varies. Some may have been buried for some three or four hundred years, but others are in better condition. The teeth are in most cases in good preservation, and in some firmly fixed in the jaws. With one exception none of the bones appear to have been cut or sawn, nor are there any marks of gnawing so far as can be traced.

"After clearing out the shaft Mr. Clack had a gallery run through the sand to the shaft at a depth of about twenty-five feet, and lower down a second gallery, from which he was able to trace the sides of the pit which had been dug. These slope outwardly towards the surface, and it would appear that subsequent to making the pit a shaft was built up and the earth thrown in round it. At the galleries the demarcation of the undisturbed Thanet Sands and the earth that has been thrown in is very clear, and the natural sand is more cohesive than the other portions.

"Various suggestions regarding the shaft and contents have been made, but it is probable that it was in some way connected with old Carew House, now the Beddington Orphanage. Possibly a well was made, and afterwards used as a refuse place. Mr. Clack is continuing work with the intention of supplementing the water supply for his works, as water exists at the base, and enters freely at the sides towards the bottom of the shaft." Mr. Reid, of the British Museum, considered the glass fragment to be a portion of a vase, probably Italian fifteenth century.

The President read a paper on "The Meteor which appeared on the Evening of February 22nd." The paper was illustrated by diagrams, and Mr. Clark had made elaborate calculations, and, in conjunction with Mr. W. F. Denning, the well-known Bristol astronomer, estimated the height of the meteor as fifty-four miles when first seen, and at forty-two miles at the time of disappearance in the south. Mr. Clark also described the streak of light which lasted about  $1\frac{1}{2}$  to  $1\frac{3}{4}$  hours. A full report of the appearance of the meteor is published in the 'Proceedings' of the British Astronomical Association for 1909.

*May 18th.*—Mr. C. W. Raffety gave a very interesting demonstration on Radio-Activity.

*September 21st.*—After some discussion the following resolution, proposed by Mr. W. Whitaker, F.R.S., and seconded by Mr. H. Kentley Moore, was passed:—"That this meeting reaffirms the resolutions in favour of the maintenance of the Whitgift Hospital, passed at the meeting held 21st December, 1897."



*October 19th.*—A lecture, profusely illustrated by lantern-slides, was delivered by Mr. Corder, of Bridgwater, on "Life on the Moorlands." This lecture was kindly provided by the President, Mr. J. E. Clark.

*November 16th.*—Mr. N. F. Robarts, F.G.S., read a short paper on "Roman Remains in Southwark." (See 'Transactions,' Art. 1.)

Mr. George Clinch, F.G.S., F.S.A. (Scot.), gave a lecture on "The Growth of Croydon from Prehistoric Times to the Present Day."

*December 7th.*—A very successful Social Evening, at which there were numerous exhibits by members:—The President, Mr. H. T. Mennell, Mr. A. Tarver, Mr. Parker, Mr. Fell, Mr. J. E. Clark, Mr. E. A. Davies, Mr. J. P. Keywood, and Mr. S. E. Hall.

Several members and friends assisted with music and songs and recitations during the evening.

## Report of Sections for 1909.

### BOTANICAL COMMITTEE.

During 1909 the Botanical Section has held a joint meeting with the Microscopical Section, and has made excursions to places of botanical interest.

On March 20th Miss Prankerdt, B.Sc., read a paper on "The Statolith Theory of Geoperception in Plants."

The Saturday excursions and evening botanical rambles, under the direction of this Committee, were as under (reports are by the conductors):—

Visit to Kew Gardens, Saturday afternoon, May 1st, 1909.—Twelve were present for more or less of the afternoon, which was fairly bright, but cold. Unfortunately our leader, Mr. G. W. Moore, was prevented from being present. Attention was first given to the rock-garden, where the earlier Saxifrages, Primulas, and Cresses, were mingling with the main series of bulbous alpines.

Among several *Narcissi*, special interest was taken in "Dawn," a cross between *N. poeticus* and *N. triandrus*. The white divisions of the perianth inherited the cyclamen-like reflexion of the latter parent and the deep-yellow disc (without a red border) was expanded to a saucer-shape, exaggerating the typical feature of the corona of *poeticus*.

Several varieties of *Anemone nemorosa* were noted, including very instructive reversion forms of the variety *bracteata*, some with a second whorl of bracteate or leafy sepals.

In the small but interesting alpine greenhouse a Pitcher Plant with flower buds was noted. The famous Gingko (*Salisburia*) was just expanding (rather than unfolding) its Maidenhair-like leaves, and the grass beneath was strewn with its catkins and bud-scales.

Among the Aloe-like plants in the Palm House, special attention

was paid to the strange blue-green flowers of the Chilian *Puya cœrulea*.

The display of ornamental varieties of *Prunus* and *Pyrus* added greatly to the beauty of the Gardens, and the Rhododendron dell was already gay.—J. EDMUND CLARK.

On Thursday evening, May 20th, a visit was paid to Wimbledon Common, under the guidance of Mr. C. D. Olive.

In order to make the most use of the limited time at their disposal, the party drove from Wimbledon station to the Common and back, and walked from Cæsar's Well to the Windmill. Wimbledon Common, in its eastern part, is an elevated open plain; but the western part is wooded, and slopes down to the valley of the Beverley Brook. Geologically it is on Plateau Gravel resting on London Clay, which crops out on the western slope. At the junction of the gravel and clay there is a line of springs which form streamlets and boggy patches, and have excavated the escarpment into a series of undulating wooded hollows. One of the springs, called Cæsar's Well, is surrounded by a massive granite kerb, commemorating Sir Henry Peek, through whose public-spirited exertions the Common was saved from enclosure by the lord of the manor. Another spring feeds a considerable sheet of water called Queen's Mere. In the wet ground were found a number of marsh plants, such as the Buckbean (*Menyanthes trifoliata*), plentiful in two places and in flower but sparingly; the large Tussock Sedge (*Carex paniculata*); the Marsh Pennywort (*Hydrocotyle*); *Lastrea dilatata*, *Equisetum limosum*, &c.; also several Mosses and Liverworts.—H. FRANKLIN PARSONS.

The botanical evening ramble to the Chipstead Valley took place on the 17th June, the conductor being Mr. H. T. Mennell.

A party of about twenty alighted at Chipstead station, and were fortunate enough to have chosen one of the few fine evenings in the inclement month of June.

Leaving the station, after a slight descent the road soon begins to mount the gentle slopes toward Park Down. The Chalk Milkwort (*Polygala calcarea*) was in beautiful bloom, and large patches of its bright blue flowers were abundant. The Dropwort (*Spiræa filipendulæ*) was also abundant, but not yet in full flower; also the Lesser Burnet (*Poterium sanguisorba*), fully out.

On reaching the upper ridge of Park Down, an extensive view was obtained. In the hedges along the crest a large number of flowering shrubs were noticed: the Spindle Tree (*Euonymus europæus*), the Buckthorn (*Rhamnus catharticus*), both the stamiferous and pistiliferous forms; the Guelder Rose (*Viburnum Opulus*), the Mealy Guelder Rose (*Viburnum lantana*), and White Beam (*Pyrus aria*). The masses of the Large White Campion (*Lychnis alba*), in full flower, were most striking.

But it was a great disappointment to find no Orchises, which we carefully searched for, and had fully expected to find in considerable variety.

On Saturday afternoon, July 10th, the excursion on the programme was to Marden Park and Haliloo Valley, under the leadership of Mr. H. T. Mennell.



The weather prospects were most unpropitious, and it rained heavily at Croydon at the hour of departure, while no one appeared on the platform to join the appointed train. Arrived at Woldingham station the President, the conductor, and one bold young man, were all the company; their courage was rewarded, as the rain had now ceased and, except for the extreme wetness of the herbage, the conditions were reasonably propitious. After following the Woldingham road for some little distance, we struck down the steep slopes to the left, and were soon in a rich botanical region. The Bee Orchis in perfection abounded. At the bottom of the valley, along the cart road, *Erysimum Cheiranthoides* and a Crucifer, identified by Mr. Salmon as *Bunias orientalis*, were gathered.

Arrived at the Haliloo Valley, careful search was made for the plant of the valley—*Lathyrus hirsutus*, but unfortunately, without success, as the writer has failed to find it for several years past. In the wood above the valley *Cephalanthera grandiflora* was abundant.

The road to Warlingham was followed, and so home, and regret was felt that more of the members had not been present to enjoy what had proved to be a successful botanical ramble.—HENRY T. MENNELL.

The third botanical evening ramble to Banstead Downs took place on July 15th, the conductor being Mr. J. Edmund Clark, B.Sc.

Twelve shared in what proved a very fruitful excursion. Attention was confined to the portion east of the railway, between Banstead and Belmont stations. Old town refuse heaps and chalk lime workings introduced several additions to the ordinary Downs flora, the former including several interesting casuals, the latter such forms as the Common Stonecrop, Rose-bay willowherb, Ploughman's Spikenard, and Viper's Bugloss. Of the former a Crucifer (*Brassica* sp.) of remarkable size was noted, with stems at the base fully an inch thick, branching freely and forming a hemispherical bush nearly eight feet in diameter. Among Roses noted was the Sweet Briar; and a yet more interesting find was a stem, with only partly developed buds, of the Giant Broomrape, a parasite on Broom and Furze. At one spot there was an interesting patch of the Yellow Pea (*Lathyrus aphaca*), a decidedly scarce plant in our district.

The following plants were also noted in flower:—*Erysimum Cheiranthoides*, *Ononis repens*, *Spiræa filipendulæ*, in great plenty; *Rubus dumetorum*, *Asperula cynanchica*, *Serratula tinctoria*, *Centaurea scabiosa* with white flowers, *Scabiosa columbaria* with proliferation, *Tragopogon pratensis*, *Calluna vulgaris* and *Erica cinerea*, neither to be expected on the Chalk. *Linaria minor* and *Calamintha acinos* were also noted.

On Sept. 18th the annual Fungus hunt took place, under the leadership of Dr. Parsons, to Farthing Down and Devil's Den Wood, Coulsdon, and was well attended. Fungi were fairly plentiful, though less so than they became during the wet weather in October. About forty species were observed, among the less common being *Agaricus (Tricholoma) grammopodius*, *A. (Collybia) tuberosus*, *A. (Clitopilus) orcella*, *A. (Naucoria) pediades*, *A. (Panæolus) papilionaceus*, *Marasmius ramealis*, *Boletus laricinus*, *Craterellus cornucopioides*, *Clavaria inæqualis*, and *coralloides*.

The record of plants observed on the various commons near Croydon has been kept up, and the numbers now stand as under :—

Hayes Common .....	348 species.	No addition since last year.
Keston Common.....	286 „	Against 283 last year.
Shirley Hills .....	201 „	„ 198 „
Croham Hurst.....	257 „	„ 256 „
Mitcham Common.....	462 „	No addition.
Riddlesdown .....	189 „	Against 188 „
Worms Heath .....	101 „	„ 92 „
Farthing Down .....	124 „	„ 115 „
Park Down .....	40 „	„ 35 „
Aldershead Heath .....	35 „	New record.

The following new localities observed during the year are worthy of record here :—

*Anemone nemorosa* var. *bracteata*.—Down.

*Potentilla intermedia* (alien).—Keston Common.

*Lathyrus montanus* (*Orobis tuberosus*) var. *tenuifolius*.—Little Farley Green.

*Trifolium pratense* var. *parviflorum*.—Gravel Pits, Hayes.

*Veronica polita*.—Oxted.

*Viscum album* (Mistletoe) on *Populus nigra*.—Oxted.

*Paris quadrifolia*.—Oxted.

*Lastræa dilatata*.—Keston Common.

The following wild plants were observed in flower near Croydon by Mr. J. E. Clark, during the Christmas season, December 19th to January 2nd, 1910 :—

*Stellaria media*, *Arabis thaliana*, *Brassica campestris*, *Capsella bursa-pastoris*, *Geum urbanum*, *Ulex europæus*, *U. nanus*, *Bellis perennis*, *Matricaria inodora*, *Ranunculus repens*, *Senecio vulgaris*, *Sonchus oleraceus*, *Daucus carota*, *Æthusa cynapium*, *Lamium album*, *L. purpureum*, Hazel male flowers, *Poa annua*. Seventeen against forty last year.

Dr. Parsons gives the following summary of the weather of 1909 in relation to vegetation :—

The year 1909 has been a disappointing one, marked by a cold backward spring, a cool sunless, rainy or unsettled summer, and a wet autumn. It has been a wet year, but rather by reason of the number of rainy days and the absence of prolonged periods of drought than by reason of an amount of rainfall much above the average. At Park Hill Rise, Croydon, the total rainfall was 25·75 in., or about two inches above the average (23·74 in.) of the previous sixteen years, whereas the number of days with rain was 191, equal to the number in the very wet year 1903, and only exceeded in the years 1900 and 1902, the average for the sixteen years being 166.

January and the first week in February were fairly mild, and some of the earliest spring flowers bloomed in my garden before the usual time, but they appeared out of the usual order; thus *Scilla sibirica* was in flower before *S. bifolia*, and the Yellow Crocus before the Winter Aconite or Snowdrop.

In the middle of February a cold period with frosts, fogs, and snow-storms set in, and continued through March; indeed, snow lay on the

ground continuously from March 1st to 10th. During this time vegetation made almost no progress; hardly any more flowers appeared until the latter part of March, and throughout March and April the dates of flowering were later than the average. The delay was fortunate for the fruit trees, as the blossom thereby escaped the late frosts. April was cold, dry and sunny in the first part, warmer in the middle, and cold and showery at the end. May was very fine, dry and sunny, but with cold east winds in the first half; there were a few hot days in the latter part. A peculiar feature observed in this month was the great abundance of fruit upon the Elm trees, not only upon the Wych Elm, which often brings fruit to perfection, but also upon the Common Elm, which rarely does so. This seems to have occurred all over England; I observed it in Devonshire and Cambridgeshire, as well as in the neighbourhood of Croydon, and I have heard of it in other parts of the country. So abundant were the fruits that some trees looked as if they were covered with brown withered foliage, and hardly put out any leafy shoots; the ground under them was littered deep with the brown hulls.

June was a cold, wet, gloomy month, and July nearly as bad; only on one day in June, and on five in July, did the thermometer exceed 70° F. The hay crop, which had shown signs of a scanty yield in the cold, dry weather of April and May, became rank and luxuriant with the rains of June, but there was little opportunity to gather it properly, and much was spoiled.

Insect pests of various kinds were prevalent during the summer.

In August there was a period of very fine, warm, and dry weather, from the 4th to the 15th; this, with a few days near the end of May, being the only hot weather during the summer. This hot spell broke up with a thunderstorm on the 16th, and the latter half of August was cool, cloudy, and rainy, being very cold at the end of the month. September was unsettled, with frequent rain, and October very wet.

The corn crop, which had looked well, though late in ripening, was harvested with great difficulty; indeed, some fields were never got in at all, stooks of sheaves, green with the sprouting corn, standing all through the autumn.

Fruit was fairly plentiful, but did not ripen or keep well, many of the apples being worm-eaten.

Hops have almost ceased to be grown anywhere near Croydon.

The mild wet weather of October was very favourable to the growth of many Fungi, which were plentiful, and attained a large size. Mushroom, however, were unaccountably scarce.

After forty-eight hours' continuous heavy rain on October 26th to 28th the weather became colder, and a frost on the night of October 29th-30th cut off the tender vegetation.

November was fine, cold, and dry.

The season was unfavourable to autumn flowering plants, such as the autumn-blooming species of *Crocus*, most of which did not flower at all, and those that did only sparingly.

#### GEOLOGICAL COMMITTEE.

The Committee have every reason to be satisfied with the working of the Section during the past year. Regular monthly meetings were



held from January to May, and from September to December inclusive, which, for the most part, were well attended. The poor attendance at one or two of the meetings was directly traceable to the bad weather.

The maximum number of members at any meeting was fourteen.

The exhibits have been numerous and interesting, but nothing of importance can be notified in the field work of the members, chiefly owing to the scarcity of new sections in the neighbourhood.

Excursions were made on June 26th to Reigate, under the leadership of Mr. W. Whitaker, B.A., F.R.S., and to Shirley on the 23rd October, conducted by Dr. H. Franklin Parsons, F.G.S., which form the subject of separate reports.

The Hon. Sec. would be glad to receive from members and friends notification of any new sections which are opened in the neighbourhood; also photographs of geological interest for the Album, to which no additions have been made of late.

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*Excursion to Reigate, June 26th, 1909.*—This excursion was at the invitation of Miss M. C. Crosfield and members of the Holmesdale Natural History Society, Reigate, who met us at Reigate Station on arrival shortly after 3 p.m. The party at once started, under the guidance of Mr. W. Whitaker, F.R.S., and Miss Crosfield, and went to see a pit in the Lower Greensand, near the railway to the west of Reigate. The excavation had been made through the overlying Gault Clay, which was about four feet thick, and in the heaps lying at the side a number of phosphatic nodules were seen, and a few fragments of fossils found. The Lower Greensand below was of a very light colour, and showing much current bedding. The pit was about twenty-five to thirty feet deep, and the main dip of the strata to the north. Thence the party returned towards the face of the Downs, passing on the way some hearthstone works, where shelter was taken from the heavy rain, and the proprietor explained the process of making the hearthstone into bricks. Further up the hill outcrops of the stone were seen in the Upper Greensand. Some members of the party returned to Reigate with Miss Crosfield, while others went on up Colley Hill to the chalk quarry, where the chief interest was in the Crystalline Calcite, seams of which permeated the Chalk, and appeared to be due to the solution of calcium carbonate above and redeposit in crevices. This occurrence of Crystalline Calcite was the only one known at the time in Surrey. The colour varied, being in some places white and clear, and at others red with ochreous staining. Some fragments of fossils were found, but no complete specimens. The Calcite occurs in the upper part of the Middle Chalk. The view from Colley Hill was very fine, though obscured in the distance. Close underneath the Hill small coombes had formed in the face of the Downs.

Many of the members accepted Miss Crosfield's kind invitation to tea, and were shown her collection of specimens; while some members, on leaving, walked across Wray Common to Redhill, visiting on the way a quarry in the Lower Greensand, which was very interesting, owing to the variations in colour, from pure white to deep red sand, and to the fine examples of current bedding displayed.

# MICROSCOPICAL COMMITTEE.

Although the attendance at the meetings has not been quite so large as last year, they have been of much interest. The maximum attendance was twelve and the average nine. The following is a list of the meetings held:—

January: "Mitosis," Mr. W. K. Spencer, M.A., B.Sc.

February: "The Molecular Movements of Protoplasm," Mr. E. Ayerst Davies.

March (Joint meeting with Botanical Section): "The Statolith Theory of Geoperception in Plants," Miss T. L. Prankerd, B.Sc.

April: "The Shore Sands of St. Ives Bay," Mr. G. McD. Davis.

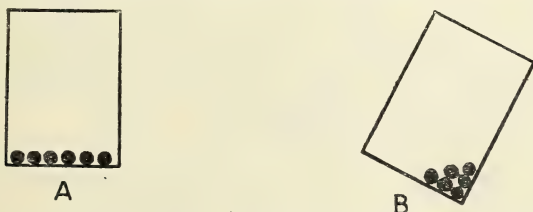
September. No subject arranged; conversational meeting.

October: "Microscopic Crustacea"; conversational meeting.

November: "Freshwater Algæ"; conversational meeting.

The following is an abstract of Miss Prankerd's paper, read at the joint meeting with the Botanical Section:—

It has long been known that the relative position assumed by the organs of plants (*e.g.* the vertical shoot and root and the frequently transverse leaves) is often a definite response to the stimulus of gravity; and recently Haberlandt and Néeve in Germany, and Francis Darwin in England, have put forward a theory to explain the way in which the pull of gravity is recognised by the plant. This theory finds the mechanism of perception in the movable heavy bodies found in many cells (statocytes) of plants, which, by their weight on the sensitive living layer of protoplasm, act as a stimulus, and enable the plant to orient itself in relation to gravity. These heavy bodies are usually starch-grains (statoplasts).



Thus, if the cell A be tilted to occupy the position B, the movable starch-grains will fall as shown, and thus form a means of enabling the organ containing such cells to perceive that it has moved from the vertical; the response to this stimulus will be a curvature, which will again place the organ and the contained statocytes in the normal position.

This theory is supported (1) by analogy with animals, many of whom possess similar organs, (2) their occurrence in those parts of plants which are capable of movement, and their absence in some organs (*e.g.* Ivy roots) which are not sensitive to gravity, (3) the visible change effected in the protoplasm by the falling of the grains, and (4) by some interesting experimental evidence.

Some objections to the theory have been answered, and, if we do not accept it, we not only have to find another which accords with the known facts, but also to explain the occurrence of the statoplasts.

The Section meetings are held on the Saturday evening next following the ordinary meeting of the Society.

#### ZOOLOGICAL COMMITTEE.

It is pleasing to report that the above Section shows signs of re-animation, one or two interesting meetings having been held in the course of the year.

The suggestion that more attention should be devoted to local fauna was well received, and it is hoped that members will record all specimens taken in the neighbourhood, in order to compile a serviceable list for future reference.

#### *Members Elected, 1909.*

*April 20th.*—Mrs. Mary F. (Robert) Corry, Mrs. R. A. Phillips, Mr. R. R. Martin, Mr. C. W. Raffety, Mr. T. G. Diplock.

*May 18th.*—Miss M. B. Elwes, Mr. C. S. Bright.

*October 19th.*—Mr. H. Faber, F.C.S.; Mr. H. B. Locke.

#### *Donations to the Library, 1909.*

*From Individuals.*—Notes of the Anglo-Saxon Cemeteries at Farthing Down and Beddington, and of the Hoard of Bronze Implements at Beddington by the late J. W. Flower (Mrs. A. W. H. Lefroy); The Flora of Shetland (W. H. Beeby, F.L.S.); The Selborne Magazine (Mr. Whitaker); The Cold Spell at the end of December, 1908 (W. Marriott, F.R.Met.S.); "Henry S. Eaton."—reprint from the Quarterly Journal of the Meteorological Society (W. Marriott, F.R.Met.S.); The Pitting of Flint Surfaces (C. Carus-Wilson, F.G.S.); Notes on *Euphrasia* and *Rhinanthus* (W. H. Beeby, F.L.S.); Cyrus Hall McCormick, his Life and Work (from the Publishers).

*From Societies.*—Report of the Corresponding Societies Committee of the British Association; Reports of the Quekett Microscopical Club; The South-Eastern Naturalist; Historical Account of the Ashmolean Natural History Society of Oxfordshire; Journal of the Royal Microscopical Society; Report of the Missouri Botanical Garden; Journal of the Manchester Geographical Society; Report of the Manchester Microscopical Society; Report of the Marine Biological Association of the West of Scotland, 1907; Report of the East Kent Natural History and Scientific Society; Proceedings of the Academy of Natural Sciences, Philadelphia; Annual Report of the Horniman Museum; Proceedings of the South London Entomological and Natural History Society; Report of the Fernley Meteorological Observatory, Southport; Journal of the Northants Natural History Society and Field Club; Report of the Cambridge University Library; Journal of the Torquay Natural History Society; Bulletin of the Lloyd Library, Cincinnati; Report of the Yorkshire Philosophical Society; Transactions of the Norfolk and Norwich Naturalists Society; The Rochester Naturalist; Transactions of the Royal Zoological Society of Belgium; Notes on Paving Bricks and Paving Brick-Clays of Illinois.





## SPECIAL FUND ACCOUNT.

£186 9s. 0d. CONSOLS.

Receipts.		Payments.	
1909.	1909.	1909.	1909.
January 1st.	£ s. d.	December 1st.	£ s. d.
To Balance ..	11 10 9	By Insurance of Museum Case ..	0 2 6
Dividends ..	4 13 0	Curator's Expenses ..	0 3 2
		Balance ..	15 18 1
	£16 3 9		£16 3 9

## BALANCE SHEET.

1910.		1910.	
January 1st.	£ s. d.	January 1st.	£ s. d.
To Balance, Special Fund Account ..	15 18 1	By Deficit as above ..	..
Subscriptions for 1910, paid in advance ..	1 0 0	Cash at Bank ..	13 10 8
Loan from Treasurer ..	20 0 0	„ in hand ..	2 9 2
	£36 18 1		15 19 10
			£36 18 1

We, the undersigned, having examined the books of the above Society, also the Accounts and Vouchers relating thereto, certify the above are properly drawn up so as to exhibit a true and correct view of the Society's affairs.

F. J. TOWNEND, *Hon. Treasurer.*

W. LIND MOORE,  
W. W. TOPLEY,

3rd January, 1910.







TRANSACTIONS  
OF  
THE CROYDON NATURAL HISTORY AND  
SCIENTIFIC SOCIETY.

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1909—1910.

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1.—ROMAN REMAINS IN SOUTHWARK.

BY N. F. ROBERTS.

(Read November 16th, 1909.)

In the month of November, 1908, the Corporation of Southwark made a drain to connect No. 52, High Street, with the sewer.

A shaft about three feet by four feet was sunk just south of the pillar letter-box standing outside the London and County Bank. Almost immediately below the surface of the roadway the workmen met with a number of human skeletons lying indiscriminately without coffins; they threw out several skulls, and estimated the number of skeletons at about fifteen. The soil below the interments consisted of accumulations which had apparently never been disturbed, and contained fragments of pottery, chiefly Roman, but I was unable to ascertain the depths at which the different pieces were met with, beyond that the so-called Red Samian was lying upon stones, which appeared to be a pavement, at the depth of twenty-one feet. The stones consisted of Kentish Rag, and were supported upon piles driven into clean river sand. The shaft was carried down two feet into the sand: the piles were reported to be driven below this depth, and some pieces were drawn out. In the sand the men met with an almost flat stone, said to be about fifteen inches by nine or ten inches. This was broken up, but I secured three

small fragments which fit together, from which the stone appears to have been a Mealing Stone, made from a Lower Greensand rock, exactly similar to Mealing Stones found at Wallington.

Another shaft was sunk close to the pavement opposite No. 52, at about twelve feet distance from the first. This was sunk to a depth of ten feet, and a heading driven from the first to the second, about six feet high.

This speedily left the sand below it, and was then entirely in the black earth. The men reported that the pottery, which was principally Roman, was chiefly met with just above the sand.

In addition to fragments of Samian ware, the handle and rim of an amphora, a piece of Upchurch or similar ware, and coarser pottery, probably Roman or Romano-British, and some shards of glazed ware of sixteenth and seventeenth centuries were met with.

The principal piece of Gaulish red ware—potter's mark, "Ponteius"<sup>\*</sup>—was form No. 29, British Museum Catalogue.

Another piece—"Firmus"<sup>†</sup>—was form No. 33 in the same Catalogue.

The excavations were probably on the old line of Stoney Street, and the pavement probably the Roman causeway leading to St. Mary Overy's Ferry.

I must record my indebtedness to Mr. Reginald A. Smith for identifying the pottery.

\* "Ponteius." This potter worked at Graufesenque, Department Aveyron, France, about 70-80 A.D.

† "Firmus" was probably the German potter of Rheinabern, early second century A.D.



## 2.—REPORT OF THE METEOROLOGICAL COMMITTEE, 1909.

Prepared by the Hon. Sec., FRANCIS CAMPBELL-BAYARD,  
F.R. Met. Soc.

(Read February 15th, 1910.)

THE same arrangements, under which the daily rainfall of the district around Croydon has been observed and tabulated, have been continued throughout the year 1909.

The number of stations in the printed list is one hundred and four. Four stations have come to an end during the year, namely, Rockshaw Lodge, Merstham; Shabden Park, Chipstead; Manor Lodge, Worcester Park; and Grove Vale Depôt, East Dulwich. As to these stations a few words are advisable. Mr. T. W. Hill left Rockshaw Lodge at the end of June, having observed for the Committee since October, 1894. Owing to advanced age Mr. Crerar has given up observing at Shabden Park, Chipstead, at the end of the year. When the gauge was established is not known, but it had been in existence very many years prior to October, 1894, when Mr. Crerar began to observe for the Committee, and the prior records were destroyed as they were considered to be useless. Mr. Crerar has very kindly found a new observer at Chipstead, so that there will still be a rainfall record at the place, though not at Shabden Park. Mr. F. D. Outram is leaving Manor Lodge, Worcester Park, early in the present year, and the observations came to an end on the 31st December, 1909. He commenced observing for the Committee on the 1st January, 1900. The station at the Grove Vale Depôt, East Dulwich, was given up early in February. The observations were from one of Negretti & Zambra's self-recording rain gauges of the tilting-bucket pattern, and were not very satisfactory owing to there being no check gauge with which to compare it. So to fill up the gaps in the printed sheet your Committee have four new stations, *viz.* Redhill (Warwick Road), Caterham Valley Depôt, and Kenley Pumping Station (these stations have been established by Mr. Cornwall-Walker, the Secretary and Engineer of the East Surrey Water Company), and How Green, a station between Kenley and Banstead, established by the Sutton Water Company. In order to make room for one of these stations, it will be necessary to delete a station, and the one proposed is that at Camberwell Cemetery, Forest Hill. This station is a self-recording gauge of Messrs. Negretti & Zambra's pattern, and has been an unsatisfactory one for

some time, and the gauge obviously collects too little; for 1908 the difference between this station and that of the Metropolitan Water Board's Station in Honor Oak Road was 4.20 in., and for 1909, 7.76 in. With reference to Camberwell Green, where there is both a self-recording gauge of Negretti & Zambra's pattern, and an ordinary 5 in. gauge by the side of it, as a check gauge, the figures in the printed table are those of the check gauge, so far as they have been available, and when not available the daily values are those of the self-recording gauge. In order to show the difference, Table I. has been constructed:—

TABLE I.

1909	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
Check Gauge..	0.65	0.33	2.31	1.30	1.15	3.54	3.21	1.55	1.83	3.44	0.87	1.76	21.94
Self-recording Gauge.....	0.64	0.30	2.05	1.25	1.16	3.38	3.13	1.55	1.71	3.30	0.83	1.61	20.91
Difference ....	+0.01	+0.03	+0.26	+0.05	—0.01	+0.16	+0.08	0.00	+0.12	+0.14	+0.04	+0.15	+1.03

It will be noticed that with the exception of May, when the self-recording gauge was in excess, and of August, when the two gauges gave equal amounts, the records of the check gauge were in excess of the self-recording gauge, and that the difference was not constant. Both gauges are taken weekly, and with reference to the check gauge the amounts are proportionally divided according to the daily values of the self-recording gauge. Self-recording gauges, however useful they may be in other ways, must not be implicitly relied on as regards depth, one of the reasons being that they cannot record very readily the small quantities due to dew, fog, or mist.

Appendix I. to this report contains a list of the observers, with particulars relating to the stations and gauges, and also the monthly tables of daily rainfall, of which a sufficient number have from month to month been pulled for the use of the Society. These printed tables contain the records of all observers, with the exception of Mr. Oxtoby's station on the Camberwell Town Hall, reporting to the Committee.

Appendix II. contains a record of all falls of rain of 1 in. and upwards, extracted from the monthly tables in Appendix I.

To show the features of the rainfall of 1909, Table II. has been constructed in the same way as the similar table in previous Reports. It embodies the records of thirty-nine stations from

amongst the forty-eight, whose averages for the ten years 1891-1900 are given in the Meteorological Sub-Committee's Report for 1900, the stations for which the records are not the same being marked with a \*.

On considering this table we notice at once that January, February, May, August, and November are dry, especially the latter month, and that the remaining seven months are wet, March, June, July, September, and October being especially so. Turning to particulars, in *January* we notice that there is a deficiency at every station except Battersea Waterworks, where there is a somewhat doubtful excess of nearly half an inch. The deficiency ranges from 1.41 in. at Sevenoaks, and 1.32 in. at Caterham Asylum, to 0.34 in. at Wilmington in the north-east part of the district. *February* is a wetter month than January, and at every station there is a deficiency ranging from 1.53 in. at Dorking, and 1.46 in. at Abinger Hall, to 0.54 in. at Beckenham. The extraordinarily wet *March* is well remembered, and is well shown in the table; with one solitary exception every station had more than one inch excess, the amount ranging from 3.27 in. at Dorking and 3.11 in. at Abinger Hall, to 0.96 in. at Raynes Park. *April* was another wet month, though not quite so wet as March, and the excess amounted to 1.31 in. at Abinger Hall and 1.20 in. at Dorking, to 0.06 in. at Raynes Park. *May* was a variable month, and two stations (Sevenoaks and Raynes Park) had the exact average; fourteen stations had an excess ranging from 0.68 in. at Abinger Hall to 0.06 in. at Wilmington, whilst the deficiency in the twenty-three stations ranged from 0.35 in. at Croydon (Waddon New Road) to 0.01 in. at Beckenham. *June* again was a very wet month, and the excess ranged from 2.72 in. at New Malden to 0.28 in. at Sevenoaks. *July*, as is customary, is also a wet month, the excess being from 3.37 in. at Beckenham to 0.63 in. at Leatherhead, and 0.64 in. at D'Abernnon Chase. *August* was a variable month, but on the whole it may be considered a dry one; eight stations had an excess ranging from 0.63 in. at Dorking to 0.01 in. at Beckenham, and thirty-one a deficiency ranging from 1.16 in. at Raynes Park to 0.10 in. at Wilmington and 0.13 in. at Addington Hills. *September* was a wet month, and there were only two stations with a deficiency, viz. New Malden, with 0.18 in. and Raynes Park with 0.09 in. The excess at the remaining thirty-seven stations was from 2.21 in. at Leatherhead and 2.07 in. at Keston, to 0.12 in. at Wimbledon Sewage Works and 0.17 in. at Kingston Sewage Works. *October*, as customary, was a wet month, more so than September. Every station had an excess quantity, ranging from 3.18 in. at Abinger Hall to 0.33 in. at Kingston Sewage Works. *November* has been an extremely



TABLE II.

THE RAINFALL OF 1909 AS COMPARED WITH THE AVERAGE OF THE TEN YEARS 1891-1900.

STATIONS	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
Knockholt (F. G.) .....	-1.15	-1.36	+1.41	+0.24	-0.13	+1.39	+1.34	-0.70	+1.57	+2.40	-2.21	+1.17	+3.97
Dorking .....	-1.12	-1.53	+3.27	+1.20	+0.30	+1.91	+1.37	+0.63	+0.99	+2.13	-2.61	+1.13	+7.67
Caterham (Asylum) ...	-1.32	-1.36	+1.78	+0.60	-0.07	+0.87	+1.01	-0.18	+0.99	+2.09	-2.53	+0.79	+2.67
Banstead (The Hall) *	-1.00	-1.28	+2.10	+0.69	-0.28	+1.91	+1.52	-0.23	+1.18	+1.32	-2.26	+0.67	+4.34
Addington Hills .....	-0.52	-0.95	+1.70	+0.81	-0.21	+1.26	+1.30	-0.13	+0.91	+0.95	-2.03	+0.49	+3.58
Nutfield (O. G.) .....	-0.98	-1.26	+1.47	+0.28	+0.23	+0.80	+1.65	+0.32	+1.25	+1.69	-2.21	+1.00	+4.24
Sevenoaks * .....	-1.41	-1.23	+2.19	+0.37	0.00	+0.28	+0.74	+0.21	+1.36	+2.37	-2.08	+1.96	+4.76
Keston * .....	-0.68	-0.88	+2.21	+0.64	+0.22	+1.95	+1.16	+0.19	+2.07	+1.54	-1.96	+1.38	+7.84
Forest Hill (W. Wks.) ..	-0.60	-0.85	+1.23	+0.70	-0.13	+1.85	+1.12	-0.67	+1.07	+0.95	-1.60	+0.11	+3.18
Addington (Pump St.) ..	-0.83	-1.06	+1.75	+0.64	-0.19	+1.27	+0.82	-0.27	+0.87	+1.08	-2.25	+0.52	+2.35
Abinger (The Hall) ...	-1.13	-1.46	+3.11	+1.31	+0.68	+1.47	+1.14	+0.30	+0.89	+3.18	-2.72	+1.49	+8.26
Redhill * .....	-0.91	-1.31	+1.76	+0.63	+0.20	+0.67	+1.60	+0.18	+0.85	+1.92	-2.50	+1.09	+4.18
Hayes * .....	-0.64	-1.11	+2.12	+0.43	-0.18	+1.59	+1.27	-0.23	+1.24	+1.39	-2.00	+0.62	+4.50
D'Abernon Chase .....	-1.01	-1.16	+1.86	+0.65	-0.12	+2.34	+0.64	-0.52	+1.10	+1.14	-2.15	+0.45	+3.22
Leatherhead .....	-0.66	-1.22	+2.55	+0.93	+0.14	+1.86	+0.63	+0.20	+2.21	+1.66	-2.20	+1.01	+7.11
Sutton (Waterworks) *	-1.06	-1.21	+1.42	+1.10	-0.29	+1.86	+0.77	-0.53	+0.71	+0.76	-1.94	+0.25	+1.84
Forest Hill (Newfield H.)	-0.62	-0.86	+1.63	+0.73	-0.18	+1.80	+1.06	-0.48	+1.22	+0.89	-1.61	+0.01	+3.59
Orpington .....	-0.64	-0.94	+1.52	+0.40	-0.14	+1.47	+1.07	-0.33	+1.83	+1.30	-1.89	+0.89	+4.54
West Norwood .....	-0.65	-1.07	+1.54	+0.64	-0.04	+2.58	+1.15	-0.39	+0.68	+1.03	-1.66	+0.26	+4.07

THE RAINFALL OF 1909 AS COMPARED WITH THE AVERAGE OF THE TEN YEARS 1891-1900 (*contd.*).

STATIONS	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
Beckenham *	-0.42	-0.54	+2.55	+0.95	-0.01	+2.11	+3.37	+0.01	+1.62	+1.41	-1.60	+0.80	+10.25
Nunhead .....	-0.58	-0.89	+1.61	+0.71	-0.18	+2.11	+1.42	-0.60	+0.67	+0.93	-1.24	+0.31	+4.27
Croydon (Pk. Hill Ho.) *	-0.56	-1.05	+1.67	+0.87	-0.25	+1.52	+1.21	-0.41	+1.22	+1.24	-1.70	+0.86	+4.62
Wimbledon Hill *	-0.73	-1.15	+1.68	+0.44	+0.24	+2.32	+1.52	-0.86	+0.37	+1.09	-1.53	+0.66	+4.05
Greenwich .....	-0.82	-0.85	+1.48	+0.52	-0.26	+2.09	+1.11	-0.42	+0.74	+1.12	-1.45	+0.24	+3.50
Croydon (Wn. N. Rd.)	-0.56	-1.08	+1.68	+0.79	-0.35	+1.27	+0.73	-0.46	+1.03	+1.13	-1.76	+0.61	+3.03
Wallington .....	-0.74	-1.05	+1.66	+0.85	-0.32	+1.72	+1.04	-0.24	+1.19	+1.21	-1.76	+0.55	+4.11
Beddington (C.S. Fm.) *	-0.57	-1.05	+1.06	+0.64	-0.30	+1.40	+0.76	-0.55	+0.53	+0.63	-1.92	+0.01	+0.64
South Norwood *	-0.48	-0.89	+1.63	+1.00	-0.06	+1.91	+1.43	-0.18	+1.19	+1.57	-1.57	+0.63	+6.18
Beddington (Riverside)	-0.74	-1.14	+1.59	+0.79	-0.27	+1.42	+0.87	-0.18	+0.97	+1.13	-1.93	+0.39	+2.90
Richmond *	-1.08	-1.26	+1.97	+0.20	+0.14	+2.18	+0.67	-1.08	+0.56	+0.30	-1.67	+0.02	+0.95
Wimbledon (Sew. Wks.)	-0.79	-0.98	+1.15	+0.27	+0.14	+1.95	+1.19	-0.49	+0.12	+0.53	-1.38	+0.27	+1.98
Raynes Park .....	-1.12	-1.27	+0.96	+0.06	-0.00	+1.80	+1.04	-1.16	-0.09	+0.70	-1.85	+0.16	-0.77
New Malden .....	-0.77	-0.85	+1.31	+0.20	+0.35	+2.72	+1.28	-0.69	-0.18	+0.65	-1.40	+0.31	+2.93
Esher .....	-1.02	-1.12	+1.43	+0.30	-0.06	+1.67	+0.84	-0.58	+0.91	+0.43	-1.44	+0.37	+1.73
Kingston (Sew. Works)	-0.89	-1.35	+1.30	+0.49	+0.32	+2.35	+1.86	-1.08	+0.17	+0.33	-1.63	+0.47	+2.34
Surbiton .....	-0.83	-1.04	+1.20	+0.41	+0.28	+1.87	+1.46	-0.89	+0.50	+0.61	-1.48	+0.46	+2.55
Wilmington .....	-0.34	-0.71	+1.38	+0.18	+0.06	+0.81	+1.80	-0.10	+0.75	+0.86	-1.65	+0.56	+3.60
Battersea (Waterworks)	+0.47	-0.87	+1.01	+0.53	+0.32	+1.74	+1.14	-0.61	+0.30	+1.27	-1.20	+0.22	+4.32
Deptford .....	-0.78	-0.83	+1.36	+0.46	-0.26	+1.82	+1.06	-0.59	+0.29	+0.91	-1.41	+0.23	+2.26

dry month, and every station had a large deficiency of considerably more than an inch, which ranged from 2·72 in. at Abinger Hall and 2·61 in. at Dorking, to 1·20 in. at Battersea Waterworks and 1·24 in. at Nunhead. *December*, again, was a wet month, but not extraordinarily so, and the excess of rainfall amounted to 1·96 in. at Sevenoaks, to 0·01 in. at the Croydon Sewage Farm at Beddington, and to 0·02 in. at Richmond.

If we now consider the annual rainfall of the district, we at once see that it has been a wet year, and that the excess of rainfall at all stations is considerable, with the single exception of Raynes Park, which has the somewhat large deficiency of 0·77 in. At all the other stations there is an excess, which ranges from 10·25 in. at Beckenham to 0·64 in. at the Croydon Sewage Farm at Beddington. Taking therefore the district as a whole, *i.e.* by adding the excess amounts together, deducting the deficiency, and then dividing by thirty-nine, the number of stations, we arrive at the conclusion that there is an excess of rain over the whole district of 3·88 in. Let us see, therefore, how this excess compares with Dr. H. R. Mill's statement in his letter to the *Times* of Friday, January 14th, 1910, which is as follows:—"The distinctly wet regions where the rainfall was more than ten per cent. above the average surround the south and east of Great Britain, one area lying along the south and south-east of England, culminating in a patch round the Thames estuary where the excess was more than twenty per cent. of the average." The average of the district, if we take the forty-eight stations in the Committee's report of 1900 as a basis, is 24·66 in. Ten per cent. of this is, say, 2·47 in. This amount, if we take Dr. Mill's statement as correct, should be increased by five per cent., *i.e.* 1·23 in. making the total 3·70 in., which is very nearly the amount, 3·88 in., mentioned above.

If we now consider the number of rainy days, we are confirmed in our idea that the year has been a wet one. In Table III. is given the number of rainy days at Wallington and Greenwich, and so far as the year is concerned there is an excess at Wallington of no less than forty-seven in the number of rainy days and of 4·11 in. of rainfall, and at Greenwich an excess of thirty-one days and 3·50 in. of rainfall. With respect to particulars, we notice that both in January and February the rainfall and the number of rainy days are below the average. In March and April both the rainfall and the number of rainy days are above the average. In May and August both the rainfall and the number of rainy days are below the average. In June and July and September and October the rainfall and number of rainy days are much above the average. In Novem-



ber the rainfall is much below the average; and with respect to the number of rainy days at Wallington they are below the average, whilst at Greenwich they are above, showing, however, in each case that, as compared with the deficiency in rainfall, the number of rainy days is large and the individual falls small. In December we have a rainfall above the average, and the number of days much above, again showing that the individual falls are small.

TABLE III.

NUMBER OF RAINY DAYS AT WALLINGTON, SURREY.

Average of 10 years	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year.
1891-1900	18	14	13	11	11	11	10	15	12	16	16	17	164
1909 ....	16	7	28	13	8	20	17	12	21	26	19	24	211

NUMBER OF RAINY DAYS AT GREENWICH OBSERVATORY, KENT.

Average of 10 years	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year.
1891-1900	16	12	14	11	12	12	12	15	12	16	15	16	163
1909 ....	15	9	25	14	8	18	19	10	19	22	12	23	194

The number of falls of rain of one inch and upwards are given in Appendix II., and are ten in all. Of these only those on July 27th and October 28th extend over a wide area. The greatest fall took place at Dorking (Denbies) on March 6th, and was only 1.57. in.

Mr. Baldwin Latham has again very kindly informed me that the total number of hours during which rain fell in 1909 was 602.23, which gives the actual number of days of twenty-four hours each as 25.1, and the actual annual rate of fall as .0487 in. per hour. This compares with 18.2 days and .0613 in. per hour in 1908; 16.1 days and .0656 in. per hour in 1907; 17.8 days and .0604 in. per hour in 1906; 21.6 days and .0467 in. per hour in 1905; 24.9 days and .0377 in. per hour in 1904. Mr. Baldwin Latham also says that the percolation for the year was 12.3148 in., which was nearly 2.5 in. above the average, and that the evaporation for the year was 19.06 in., which was nearly one inch above the average.

In conclusion, the Committee desire to express to the widow and son of their old observer, Dr. William Warwick Wagstaffe, of Dorset House, Sévenoaks, their sympathy for the loss they have sustained through his death on January 22nd, 1910. Dr. Wagstaffe had been an observer for the Committee for a

number of years, and the whole of his rainfall observations, commencing in January, 1884, are in the hands of your Hon. Secretary. Mrs. Wagstaffe is still keeping up the observations. The Committee also desire to express their thanks to those gentlemen and public bodies, sixteen in number, who have aided the rainfall work of the society by their pecuniary contributions, and also to the rainfall observers themselves, who by their self-sacrificing assiduity have made this organization a success.

## APPENDIX II.

### FALLS OF 1 INCH AND UPWARDS.

MARCH 6th.—Dorking (Denbies) 1·57 in.; Abinger (The Hall) 1·20 in.; Abinger (Rectory) and Leatherhead 1·16 in.; Sevenoaks and Beckenham 1·10 in.; D'Abernon Chase and Epsom 1·05 in.; Ashted 1·02 in.; Banstead (The Hall) 1·00 in.

JUNE 12th.—Brockwell Park 1·10 in.

JUNE 26th.—New Malden 1·25 in.

JULY 6th.—Burgh Heath 1·48 in.; Beckenham 1·32 in.; Warlingham 1·15 in.; Banstead (The Hall and Basing House) 1·08 in.

JULY 27th.—Dartford 1·16 in.; Chipstead and Brockwell Park 1·12 in.; Dorking (Denbies) 1·10 in.; Abinger (The Hall) 1·08 in.; Wilmington 1·06 in.; Abinger (Rectory) and West Wickham 1·05 in.; Eltham 1·04 in.; Walton-on-the-Hill, Warlingham; Beddington (Foxley Lane), Beckenham, and Upper Norwood 1·03 in.; Holmbury St. Mary, Worcester Park, and West Norwood 1·02 in.; Beddington Corner 1·01 in.; Southfleet and South Norwood 1·00 in.

AUGUST 25th.—West Wickham 1·10 in.

SEPTEMBER 17th.—Leatherhead 1·18 in.

OCTOBER 26th.—Southfleet 1·20 in.; Sevenoaks and Dartford 1·14 in.; Abinger (The Hall) and Westerham (Hill Estate) 1·13 in.; Betsom Hill 1·08 in.; Chevening Park 1·06 in.; Westerham (Town) 1·03 in.; Knockholt (field gauge) 1·02 in.; Abinger (Rectory) 1·00 in.

OCTOBER 28th.—Chevening Park 1·51 in.; Westerham (Town) 1·50 in.; Abinger (The Hall) 1·48 in.; Sevenoaks and Caterham (The Reservoir) 1·42 in.; Westerham (Hill Estate) 1·38 in.; Redhill 1·32 in.; Abinger (Rectory) 1·30 in.; Betchworth and Betsom Hill 1·29 in.; Chaldon 1·28 in.; Reigate and Warlingham 1·25 in.; Caterham (Asylum) 1·24 in.; Nutfield (new gauge) 1·21 in.; Nutfield (old gauge) 1·20 in.; Walton-on-the



Hill 1·19 in.; Holmbury St. Mary and Ashtead 1·16 in.; Chipstead 1·13 in.; Hedley, Leatherhead, Epsom, and Beddington Corner 1·12 in.; Upper Gatton and Kenley (Hazelea) 1·11 in.; Buckland, Knockholt (tower gauge), Purley (Riddlesdown Road), Sutton (Sewage Works), and Wallington 1·10 in.; Sanderstead (Beechwood Road) 1·08 in.; Orpington 1·07 in.; Beddington (Foxley Lane), Croydon (Waddon New Road), Croydon (Park Hill House), and Worcester Park 1·06 in.; Banstead (The Hall), Purley (Pumping Station), and Hayes 1·05 in.; Sutton (Waterworks), Beddington (Riverside), and Croydon (Avondale Road) 1·04 in.; Benhilton, Croydon (Woburn Road), Addington (Pumping Station), South Norwood, and Surbiton 1·03 in.; Dorking (Denbies) 1·02 in.; South Nutfield, Raynes Park, and New Malden 1·01.

DECEMBER 21st.—Dorking (Denbies) 1·00 in.

# APPENDIX I.

## CROYDON NATURAL HISTORY AND SCIENTIFIC SOCIETY (*Meteorological Committee.*)

STATIONS.	OBSERVERS.	Size of Gauge.	Height above Ground.	Height of Station above Sea-level.
		IN.	FT. IN.	FT.
Holmbury St. Mary (Ioldwynds)	F. Cornish	5	1 0	530
Abinger (The Rectory)	Miss Brodie-Hall	5	1 0	381
Abinger (The Hall)	The Lord Farrer	8	2 0	320
Dorking (Denbies)	J. Beesley	5	0 6	610
Betchworth (The Holmes)	F. R. Rushton	5	0 8	322
Buckland (Hartswood)	R. W. Clutton	5	1 0	174
Reigate (The Gas Works)	W. H. Price	10	1 0	275
Redhill (Linkfield Lane)	Miss M. E. Janvrin	5	1 0	325
Nutfield (The Priory, old gauge)	J. Moffatt	8	1 2	468
Nutfield (The Priory, new gauge)	J. Moffatt	8	1 2	331
South Nutfield (Hale Edge)	R. C. Grant	5	1 0	270
Outwood (The Orchards)	H. Gurney	5	1 0	280
Betsom Hill	W. Morris	5	1 0	820
Sevenoaks (St. John's Hill)	W. W. Wagstaffe	5	1 10	404
Westerham (Hill Estate)	W. Morris	5	1 0	539
Westerham (The Town)	W. Morris	5	1 0	380
Merstham (Rockshaw Lodge)	T. W. Hill	5	1 0	475
Upper Gatton (The Park)	F. Druce	5	1 0	600
Walton-on-the-Hill (Shirley)	E. P. Hawthorn	5	0 6	560
Hedley (The Hurst)	Mrs. Lyall	5	1 3	450
Leatherhead (Downside)	A. Tate	5	1 0	250
D'Abernon Chase	Sir W. Vincent, Bart.	5	1 0	280
Ashstead (The Hut)	Mrs. Maples	5	0 5	200
Chipstead (Shabden Park)	J. Crerar	5	1 0	550
Chaldon (The Rectory)	Rev. G. E. Belcher	5	1 0	542
Caterham (Metropolitan Asylum)	P. E. Campbell, M.D.	5	1 0	610
Caterham (The Reservoir)	E. Surrey Water Co.	5	1 0	705
Chevening (The Park)	C. Sutton	5	1 0	360
Knockholt Beeches (Field Gauge)	W. Morris	5	1 0	785
Knockholt Beeches (Tower Gauge)	W. Morris	5	24 6	812
Chelsham (Fairchildes)	A. S. Daniell	8	1 0	600
Warlingham (Egremont)	H. Rogers	5	1 0	614
Kenley (Hazelea)	Mrs. Carr-Dyer	5	1 0	282
Banstead (The Hall)	Mrs. Maitland	8	1 0	480
Banstead (Basing House)	A. Pringle	8	1 0	456
Burgh Heath (The Reservoir)	Sutton Dis. Water Co.	8	1 0	580
Epsom (Ashley Road)	S. C. Russell	5	1 0	160
Sanderstead (Beechwood Road)	E. Alexander	5	0 10	375
Purley (Riddlesdown Road)	J. E. Clark	5	1 0	360
Purley (Pumping Station)	E. Surrey Water Co.	5	1 0	215
Sutton (Carshalton Road)	Sutton Dist. Water Co.	5	1 0	110
Sutton (Sewage Works)	C. Chambers Smith	8	1 0	94
Benhlilton (Angel Hill)	J. C. M. Stanton	5	1 3	125
Carshalton (Sewage Works)	W. W. Gale	5	1 0	118
Wallington (Maldon Road)	F. Campbell-Bayard	5	4 1	140
Beddington (Foxley Lane)	H. R. Wise	5	1 0	350
Beddington (Riverside)	Miss Roston	5	1 0	120
Beddington (Sewage Farm)	Croydon Corporation	5	1 0	129
Croydon (Waddon New Road)	Croydon Corporation	5	1 0	146
Croydon (Woburn Road)	A. Malden	5	1 6	183
Croydon (Park Hill Rise)	H. F. Parsons, M.D.	5	1 0	250

STATIONS.	OBSERVERS.	Size of Gauge.	Height above Ground.	Height of Station above Sea-level.
		IN.	FT. IN.	FT.
Croydon (Park Hill House).....	Baldwin Latham....	8	1 0	265
Croydon (Avondale Road) .....	Dr. G. J. Hinde ....	5	1 0	225
Addington Hills (The Reservoir)..	Croydon Corporation	8	0 9	473
Addington (Pumping Station)....	Croydon Corporation	8	1 0	331
West Wickham (Wickham Court)	Sir H. F. Lennard, Bt.	5	1 2	300
Hayes (Hayes Place) .....	J. Grandfield .....	8	1 0	350
Keston (Forest Lodge).....	W. H. Dodgson ....	5	1 0	300
Orpington (Waterworks).....	W. Morris .....	5	1 0	220
Southfleet (Waterworks).....	W. Morris .....	5	1 0	82
Chislehurst (Hawkwood) .....	Miss M. C. Edlmann	5	1 0	300
Bromley (The Palace) .....	Coles Child .....	5	1 0	187
Bromley Common (Elmfield) ....	Rev. J. P. Faunthorpe	5	0 9	240
Beckenham (Recreation Ground)	J. A. Angell .....	8	1 0	110
Anerley (The Town Hall) .....	H. W. Longdin.....	8	40 0	191
South Norwood (Woodvale) .....	E. Dean .....	5	1 0	216
Beddington Corner (Millgreen Rd.)	G. Miller .....	5	5 0	77
Lower Tooting (Longley Road) ..	Mrs. M. M. Latham..	5	1 0	55
Wimbledon (Sewage Works) ....	C. H. Cooper .....	5	1 0	58
Wimbledon (The Downs) .....	Francis Fox .....	5	-1 0	162
Wimbledon (Leopold Road) ....	S. Single .....	5	1 0	150
Raynes Park (Pumping Station)..	C. H. Cooper .....	5	1 0	47
New Malden (Sewage Works) .....	R. H. Jeffs.....	5	1 0	45
Worcester Park (Manor Lodge)..	F. D. Outram .....	5	1 9	120
Esher (Sewage Works).....	H. C. Fread .....	5	1 0	40
West Molesey (The Waterworks)	H. B. Stent .....	5	1 0	32
Surbiton (The Waterworks) ....	H. E. H. Wrinch ....	5	0 6	25
Kingston (Sewage Works) .....	P. G. Lloyd .....	5	1 0	25
Kingston (County Hall) .....	E. Underwood .....	5	0 9	31
Richmond (The Terrace) .....	J. H. Brierley .....	8	1 6	109
Kew (Kew Gardens Road) .....	Lionel Burrell, M.D.	5	1 2	23
Putney Heath (The Reservoirs)..	H. F. Rutter .....	5	1 0	180
Wandsworth Com. (Patten Road)	F. J. Brodie .....	5	1 0	100
Streatham (Conyers Rd. Waterw.)	J. W. Restler .....	5	4 1	110
West Norwood (Thornlaw Road)..	W. Marriott .....	5	1 0	220
Up. Norwood (Dulwich-wood Park)	H. V. Caldicott .....	5	1 2	276
Forest Hill (Dartmouth Road) ...	L. W. F. Behrens ..	5	1 0	220
Forest Hill (Honor Oak Road) ..	J. W. Restler .....	5	1 0	344
Forest Hill (Camberwell Cemetery)	W. Oxtoby .....	8	2 2	160
Wilmington (The Waterworks) ..	W. Morris .....	5	1 0	25
Dartford (West Hill House) ....	Lieut-Col. C. N. Kidd	5	1 3	100
Eltham (High Street) .....	W. Morris .....	5	1 0	245
Nunhead (Linden Grove) .....	J. W. Restler .....	5	4 0	176
East Dulwich (Grove Vale Depot)	W. Oxtoby .....	8	2 2	58
Brockwell Park .....	Lond. County Council	8	1 0	140
Clapham Park (Atkins Road) ....	D. W. Horner .....	5	1 3	128
Battersea Park .....	Lond. County Council	5	9 6	12
Battersea (Waterworks) .....	J. W. Restler .....	5	3 0	21
Camberwell (The Green).....	W. Oxtoby .....	8	2 2	17
Camberwell (Leyton Square)....	W. Oxtoby .....	8	2 2	14
Telegraph Hill .....	Lond. County Council	5	8 6	135
Greenwich (Royal Observatory)..	Astronomer Royal ..	8	0 5	155
Deptford (Waterworks) .....	W. Morris .....	5	1 0	20
Southwark Park .....	Lond. County Council	5	10 0	9

*Note.*—The observations are taken at 9 a.m., except at Kingston (County Hall) and Streatham (7.30 a.m.), Purley (Riddlesdown Road) (8 a.m.), Ashted (9.30 a.m.), Sevenoaks, Clapham Park, Battersea Park, and Southwark Park (10 a.m.), and Banstead (Basing House) (6 p.m.).



Day of Mo.	Holmbury St. Mary	Abinger (Rectory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Beigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westham (Hill Est.)	Westham (Town)	Mersham	Upper Gallon	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon	Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)
1	.04	.10	.01	.02	.01	.01	.02	.02	.03	.02	.01	.03	.10	.02	.	.02	.	.01	.	.	.	.	.	.	.01	.01	.10
2	.	.	.	.02	.01	.	.	.	.01	.01	.	.01	.	.02	.	.	.	.01	.	.	.	.	.01	.02	.01	.01	.01
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.02	.	.	.
4	.03	.10	.	.03	.	.04	.01	.01	.01	.01	.02	.02	.02	.	.01	.02	.04	.01	.05	.	.	.	.01	.01	.01	.01	.01
5	.	.	.	.06	.11	.14	.11	.13	.09	.09	.09	.10	.09	.17	.10	.11	.09	.14	.09	.14	.11	.08	.10	.10	.10	.09	.12
6	.	.	.	.07	.07	.09	.08	.01	.06	.06	.06	.04	.	.02	.05	.02	.05	.06	.06	.06	.07	.08	.08	.05	.05	.05	.05
7	.10	.09	.13	.07	.07	.22	.23	.08	.06	.26	.22	.20	.33	.20	.28	.26	.27	.27	.30	.21	.18	.21	.19	.24	.24	.24	.24
8	.24	.22	.24	.26	.24	.22	.23	.28	.26	.26	.22	.20	.33	.20	.28	.26	.27	.27	.30	.21	.18	.21	.19	.24	.24	.24	.24
9	.	.	.	.	.	.	.	.01	.03	.02	.02	.01	.	.02	.01	.01	.02	.02	.	.	.03	.01	.02	.02	.02	.02	.02
10	.04	.02	.03	.03	.02	.02	.10	.08	.07	.07	.05	.05	.06	.06	.05	.05	.05	.06	.06	.06	.07	.08	.08	.08	.05	.05	.05
11	.	.	.	.	.	.	.	.01	.03	.02	.02	.01	.	.02	.01	.01	.02	.02	.	.	.	.03	.01	.02	.02	.02	.02
12	.02	.02	.10	.09	.08	.06	.10	.03	.07	.07	.05	.05	.06	.06	.05	.05	.05	.06	.06	.07	.04	.04	.04	.04	.07	.07	.06
13	.28	.27	.29	.33	.34	.44	.32	.38	.29	.29	.30	.30	.40	.28	.25	.32	.31	.37	.34	.32	.28	.21	.21	.26	.34	.34	.39
14	.14	.28	.24	.22	.21	.11	.19	.22	.10	.10	.07	.11	.11	.09	.08	.11	.20	.22	.21	.27	.22	.14	.14	.24	.21	.18	.17
15	.	.	.	.	.	.	.	.01	.01	.02	.01	.01	.01	.	.	.	.01	.02	.01	.	.	.	.	.	.01	.01	.01
16	.	.01	.13	.02	.01	.01	.02	.01	.01	.11	.10	.09	.11	.12	.10	.10	.09	.09	.09	.12	.08	.	.	.10	.09	.10	.11
17	.08	.07	.13	.09	.07	.08	.07	.10	.11	.11	.10	.09	.11	.12	.01	.01	.09	.09	.09	.09	.08	.	.	.	.02	.	.
18	.	.	.	.	.01	.	.02	.	.02	.02	.01	.01	.01	.02	.01	.01	.	.01	.01	.	.	.	.	.	.	.	.
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29	.	.	.	.04	.04	.03	.	.02	.04	.04	.02	.02	.02	.03	.04	.	.	.04	.	.	.	.	.	.	.03	.	.
30	.	.	.	.	.	.	.	.	.09	.08	.07	.07	.10	.04	.10	.12	.12	.11	.09	.05	.11	.10	.	.10	.09	.	.
31	.14	.12	.13	.09	.10	.09	.09	.11	.09	.08	.07	.07	.10	.04	.10	.12	.12	.11	.09	.05	.11	.10	.88	1.17	1.33	1.16	1.33
*	1.11	1.12	1.31	1.39	1.33	1.34	1.26	1.51	1.22	1.18	1.04	1.08	1.29	1.14	1.11	1.22	1.28	1.50	1.33	1.26	1.15	.88	1.17	1.33	1.16	1.33	1.33
†	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

\* The figures in this row give the totals for the month. † The totals from January 1st.

## Daily Rainfall.

*Greenwich average 90 years (1815-1904) for January is 1.81 in., and from 1st January 1.81 in.*

January, 1909

Day of Mo.	Caterham (Reservoir)	Ovening Park	Knooholt (field gau.)	Knooholt (lower gau.)	Chelsham	Warling-ham	Kenley (Hazelea)	Banstead (The Hall)	Banstead (Basing H.)	Burgh Heath	Epsom	Sandersd. (Beech. rd.)	Purley (Ridld. rd.)	Purley (Pump.St.)	Sutton (Waterw.)	Sutton (Sew.Wks.)	Benlilton	Carshalton	Wallington	Beddington (Boxley L.)	Beddington (Riverside)	Beddington (Sew. Fm.)	Croydon (Vn.N. rd.)	Croydon (Web. rd.)	Croydon (Park H. R.)	Croydon (Pk. H. Ho.)
1	.03	..	..	..	..	..	..	..	..	.02	.01	..	..	..	..	..	..	.01	..	..	..	..	..	..	..	..
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4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	.02	.04	.03	.03	..	.04	.01	.02	.03	.03	.01	.01	.01	..	..	..	.02	..	..	.01	..	..	.01	..	..	.01
6	.03	.04	.04	.03	..	.05	.07	.09	.11	.11	.10	.07	.01	..	..	..	.13	..	..	.05	.09	.06	.17	.19	.14	.17
7	.12	.22	.19	.17	..	.05	.01	.03	.05	.13	.06	.02	.02	..	..	..	.05	..	..	.04	.03	.03	.03	.04	.03	.04
8	.02	.02	.02	.02	..	.25	.21	.22	.23	.21	.20	.21	.24	.21	.20	.18	.20	.05	.20	.21	.19	.17	.19	.18	.20	.19
9	.05	.26	.26	.24	..	..	.01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	.29	.01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	.02	..	..	..	..	.06	.01	.03	.03	.05	.05	.01	.01	.02	..	.03	.02	..	.03	.03	.01	.04	.05	.06	.05	.05
13	.07	.02	.04	.03	..	.39	.30	.25	.28	.29	.23	.27	.32	.28	.21	.09	.20	..	.23	.26	.24	.24	.24	.21	.26	.25
14	.36	.33	.33	.30	..	.23	.20	.27	.27	.25	.22	.24	.23	.25	.20	.12	.17	.17	.26	.26	.27	.26	.28	.25	.29	.29
15	.16	.05	.13	.10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.01	..	..	.01	..	..	..	..
16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	.02	.01	..	..	..	.13	.08	.07	.07	.07	.09	.07	.01	..	..	.08	..	..	.06	..	.01	.04	.08	.09	.10	.12
18	.13	.09	.12	.11	..	..	..	..	.02	..	.02	.01	.03	.09	.06	..	.08	.06	..	..	.07	..	..	..	..	..
19	..	..	.01	.01	..	.03	.01	..	..	..	..	.01	.01	..	..	..	..	..	.02	..	.02	..	.02	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	.02	..	..	..	..	..	..	..	..	..	.01	..	..	..	..	..	.01	..	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
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29	..	.05	..	..	..	.04	.01	.01	..	.04	.04	.01	.03	..	..	..	.02	..	.02	..	.01	.02	.02	..	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
31	.12	.08	.06	.03	..	.08	.08	.07	.08	.24	.05	.07	.09	.14	.08	.07	.05	.07	.07	.07	.07	.07	.08	.10	.08	.09
*	1.47	1.18	1.20	1.04	1.92	1.37	1.04	1.15	1.17	1.46	1.17	1.03	1.16	1.13	.86	.76	.96	.82	1.06	.62	1.06	.99	1.20	1.13	1.19	1.26
+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

\* The figures in this row give the totals for the month

+ The table from Tennessee let

Day of Mo.	Croydon (Avondale rd.)	Addington Hills	Addington (Pump, St.)	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon (The Downs)	Wimbledon (T. Pold rd.)	Raynes Park	New Malden	Worcester Park	Esher	West Molesey	Surbiton	Kingston (Sew. Wks.)
1	..	..01	..	..	..	..	..	..	..	..	..	..	..	..	..	..01	..	..	..01	..	..01	..	..	..01	..	..
2	..	..01	..	..	..	..	..	..	..	..	..	..	..	..	..	..01	..	..	..01	..	..	..	..	..	..	..
3	..	..01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..01	..	..	..	..	..	..	..
4	..	..01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..01	..	..	..	..	..	..	..
5	..	..01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..01	..	..	..	..	..	..	..
6	..	..02	..01	..02	..	..03	..19	..15	..08	..15	..17	..12	..15	..	..08	..23	..02	..02	..22	..09	..10	..15	..05	..07	..02	..02
7	..10	..16	..15	..16	..15	..03	..19	..15	..08	..15	..17	..12	..15	..14	..08	..01	..20	..15	..22	..09	..10	..15	..05	..07	..11	..11
8	..04	..20	..05	..05	..06	..04	..05	..05	..05	..05	..05	..05	..04	..06	..	..04	..04	..07	..05	..05	..04	..06	..06	..06	..06	..06
9	..21	..20	..20	..25	..20	..22	..18	..15	..17	..20	..19	..20	..16	..19	..22	..19	..20	..20	..21	..18	..16	..20	..16	..16	..18	..21
10	..04	..20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..01	..	..	..	..	..	..	..
11	..01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..02	..	..	..	..	..	..	..
12	..02	..04	..01	..07	..08	..07	..09	..03	..03	..03	..03	..02	..02	..03	..01	..01	..01	..02	..04	..05	..04	..01	..02	..01	..01	..01
13	..28	..27	..31	..34	..28	..30	..25	..14	..19	..21	..24	..27	..20	..24	..26	..20	..15	..19	..17	..18	..11	..19	..10	..10	..10	..12
14	..28	..28	..23	..27	..27	..20	..20	..19	..24	..28	..25	..32	..18	..21	..15	..08	..06	..09	..08	..09	..08	..10	..11	..09	..09	..14
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..01	..	..09	..08	..09	..08	..10	..11	..09	..09	..14
16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..05	..	..02	..01	..01	..	..	..02	..	..02	..02
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..01	..05	..06	..06	..05	..04	..05	..04	..05	..05	..03
18	..10	..09	..09	..09	..11	..10	..09	..09	..08	..12	..10	..10	..09	..09	..06	..01	..05	..06	..06	..05	..04	..05	..04	..05	..05	..03
19	..02	..02	..01	..	..	..03	..	..	..	..	..	..	..02	..02	..	..01	..05	..06	..02	..05	..04	..05	..04	..05	..05	..03
20	..01	..01	..01	..03	..	..01	..	..04	..	..	..04	..02	..	..01	..	..01	..	..02	..02	..	..	..	..01	..	..	..02
21	..01	..01	..	..03	..	..01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..02
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
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26	..01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..02	..02	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	..01	..02	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	..01	..01	..01	..	..05	..02	..02	..03	..05	..04	..02	..02	..02	..02	..	..01	..01	..	..03	..	..	..	..	..02	..	..03
30	..	..	..	..	..	..	..	..05	..04	..05	..02	..07	..07	..09	..08	..07	..06	..08	..07	..08	..09	..09	..	..07	..08	..07
31	..08	..10	..11	..10	..08	..07	..05	..05	..04	..05	..02	..07	..07	..09	..08	..07	..06	..08	..07	..08	..09	..09	..57	..07	..08	..07
*	1-24	1-31	1-20	1-38	1-28	1-09	1-12	..97	..96	1-15	1-14	1-27	..98	1-12	..92	1-01	..81	..96	..99	..80	..67	..86	..57	..69	..80	..92
†	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

\* The figures in this row give the totals for the month.

† The totals from January 1st.



## Daily Rainfall.

*Greenwich average 90 years (1815-1904) for January is 1.81 in., and from 1st January 1.81 in.*

January, 1909.

[illegible]

## NOTES.

JANUARY, 1909.

THE month has been for the first three weeks mild, but the last week cold. It has been also very dry, with a great deal of mist.] Diphtheria and scarlet fever have been somewhat prevalent. Thunderstorms occurred throughout the district on the 7th and 15th, accompanied with hail. There was skating in the last week in many parts of the district. The observer at West Wickham says: "I do not remember the garden vegetables of the *Brassica* family being so badly cut off, and the wallflowers have also suffered." The aconite flowered at Redhill and Benhilton on the 10th, and the snowdrop at Benhilton on the 24th. A sun-pillar was seen at Epsom on the 29th. Solar haloes were seen at Epsom on the 7th, 12th, 14th, 29th, and 31st, and at Greenwich on the 7th, 14th, and 29th; whilst lunar ones were observed at Beddington (Riverside) on the 11th, at Epsom on the 14th, 15th, 29th, and 30th, and at Benhilton, Croydon (Park Hill House), and Greenwich on the 30th. There was slight snow at Greenwich on the 8th and 30th, and at Wallington on the 30th. The rainfall of the month is about one inch below the average. The mean temperature is slightly below the average, and was at Wallington  $38^{\circ}2$ , at Croydon (Park Hill House)  $37^{\circ}8$ , at Worcester Park  $37^{\circ}6$ , at Warlingham  $37^{\circ}2$ , and at Epsom  $37^{\circ}1$ . At Croydon (Park Hill House) percolation through the chalk gauge was 1.391 in., and evaporation to the 23rd .205 in., after which date the tank was frozen. There were recorded at Wallington 46.4 hours of sunlight, which is 0.5 hours, or one per cent., above the January average of the twenty years 1886-1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

*Hon. Sec.*

WALLINGTON, SURREY, 19th February, 1909.

## NOTES.

FEBRUARY. 1909.

THE first week of the month was mild, with a shade maximum on the 4th of over  $56^{\circ}$ , and a shade minimum on that day of over  $49^{\circ}$ . After this week the month became cold with many frosty nights. The month was also exceedingly dry. Snow fell at Greenwich and Wallington on the 10th, 11th, 25th, 26th, 27th, and 28th, and throughout the district there were snow showers the last three days. The depth of snow varied greatly, being on the 28th at Abinger (The Hall) 6 in., at Croydon 4 in., at Kenley  $3\frac{1}{2}$  in., and at Ashstead between 2 in. and 3 in., and there was skating at the end of the month at Keston. The keen winds, which were mostly from the north and east, combined with the frosty nights, materially injured winter greens in the gardens and brought all vegetation to a standstill, and caused much sickness and a greatly increased mortality from diseases of the lungs. At West Wickham, wherever the buds of plums, currants, and gooseberries were unprotected, the bullfinches and tits did great mischief. Rooks began to build at Nutfield on the 25th. Solar haloes were observed at Greenwich on the 8th, 9th, 14th, 17th, 23rd, and 26th, and at Epsom on the 8th, 14th, and 17th, and a parhelion at Greenwich on the 26th; whilst lunar haloes were seen at Greenwich on the 5th and 8th, at Epsom on the 8th and 9th, at Beddington (Riverside) on the 1st, and at Purley, Benhilton, and Wallington on the 8th. The first white butterfly was seen at Benhilton on the 21st, and the yellow crocus bloomed on the same date. On the 22nd a very remarkable meteor was seen at about 7.25 p.m.; it travelled from east to south, and had a remarkable pair of tails, persisting about two hours. The rainfall of the month is about 40 per cent. of the average. The mean temperature of the month is between  $2^{\circ}\cdot 5$  and  $3^{\circ}$  below the average, and was at Croydon (Park Hill House) and Worcester Park  $36^{\circ}\cdot 8$ , at Wallington  $36^{\circ}\cdot 6$ , at Warlingham  $35^{\circ}\cdot 7$ , and at Epsom  $35^{\circ}\cdot 5$ . At Croydon (Park Hill House) only  $\cdot 383$  in. percolated through the chalk gauge, and the evaporator was frozen at the end of the month. There were recorded at Wallington 62.5 hours of sunlight, which is 1.4 hours, or one per cent. below the February average of the twenty years 1886-1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

*Hon. Sec.*

WALLINGTON, SURREY, 23rd March, 1909.



Day of Mo.	Holmbury St. Mary	Abinger (Rectory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Reigate	Redhill	Northfield (old gauge)	Northfield (new gauge)	South Nutehill	Outwood	Betsom Hill	Sevenoaks	Westersham (Hill East)	Westersham (Town)	Mersham	Upper Gatton	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)
1	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
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26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
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\* The figures in this row give the totals for the month.

† The totals from January 1st.

## Daily Rainfall.

*Greenwich average 90 years (1815-1904) for February is 1.53 in., and from 1st January 3.34 in.*

February, 1909.

[illegible]

# Daily Rainfall.

Greenwich average 90 years (1815-1904) for February is 1.55 in., with from 1st January to 28th.

Day of Mo.	Croydon (Avondard.)	Addington Hills	Addington (Pump, St.)	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon (The Downs)	Wimbledon (L. Pold rd.)	Raynes Park	New Malden	Worcester Park	Esher	West Molesey	Surbiton	Kingston (Sew. Wks.)
1	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
2	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
3	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
4	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
5	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
6	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
7	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
8	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
9	.17	.20	.29	.25	.24	.25	.25	.20	.17	.20	.18	.22	.17	.16	.14	.15	.14	.11	.14	.12	.10	.15	.09	.07	.10	.11
10	.19	.17	.12	.11	.12	.12	.15	.17	.15	.17	.13	.18	.10	.13	.08	.05	.03	.05	.05	.05	.05	.06	.05	.04	.05	.06
11	.10	.08	.10	.15	.14	.28	.12	.10	.10	.11	.07	.14	.06	.08	.06	.05	.04	.05	.05	.05	.05	.05	.04	.04	.04	.04
12	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
13	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
14	.02	.03	.01	.02	.03	.02	.01	.01	.01	.01	.05	.01	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
15	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
16	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
17	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
18	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
19	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
20	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
21	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
22	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
23	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
24	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
25	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
26	.03	.02	.04	.18	.06	.17	.03	.01	.01	.03	.03	.04	.01	.03	.01	.02	.03	.05	.05	.04	.03	.07	.03	.07	.02	.02
27	.09	.14	.12	.21	.07	.15	.08	.06	.15	.15	.18	.14	.01	.09	.14	.05	.02	.07	.10	.06	.03	.09	.03	.07	.01	.01
28	.14	.19	.14	.21	.07	.15	.14	.14	.07	.19	.17	.32	.01	.19	.14	.26	.19	.08	.19	.15	.22	.17	.11	.15	.20	.06
*	.76	.85	.83	.92	.69	.89	.78	.71	.65	.84	.81	1.05	.37	.71	.43	.60	.47	.43	.53	.48	.45	.59	.83	.37	.42	.28
†	2.00	2.16	2.03	2.30	1.97	1.98	1.90	1.68	1.61	1.99	1.95	2.32	1.85	1.83	1.35	1.61	1.28	1.39	1.52	1.28	1.12	1.45	.90	1.06	1.22	1.20

\* The figures in this row give the totals for the month.

† The totals from January 1st.



# Daily Rainfall.

Greenwich average 90 years (1815-1904) for February is 1·53 in., and from 1st January 3·34 in.

February, 1909

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putney Heath	Wandsw.	Streatlam	West Norwood	Upper Norwood	Forest Hill (Dartn.r.d.)	Forest Hill (Hon.O.r.d.)	Forest Hill (Cemetery)	Wilmington	Dartford	Eltham	Nunhead	East Dulwich	Brockwell Park	Clapham Park	Battersea Park	Battersea (Valew.rk.)	Cambe'well (TheGreen)	Cambe'well (Teylonsq.)	Telegraph Hill	Greenwich	Deptford	Southwark Park
1	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Σ	·27	·32	·43	·48	·56	·53	·61	·70	·73	·58	·37	·70	·76	·72	·32	·68	·50	·42	·30	·33	·30	·30	·36	·69	·55	·54
†	1·10	1·01	1·23	1·38	1·47	1·27	1·65	1·73	1·75	1·60	1·21	1·71	1·92	1·66	·98	1·70	1·32	1·34	2·04	·98	·85	1·27	1·49	1·22	·96	·96

\* ml. given in A.S. from 1815 to 1840, for the month.

† The totals from January 1st

Day of Mo.	Holnbury St. Mary	Abinger (Rectory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Reigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westernham (Hill Est.)	Westernham (Town)	Mersham	Upper Gatton	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon Chase	Ashstead	Chippstead	Chaldon	Caterham (Asylum)	
1	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
2	..	16	04	10	04	02	02	03	04	04	03	04	09	..	06	06	03	04	10	..	07	05	09	05	04	05	
3	28	28	27	38	29	24	23	29	23	27	23	22	12	..	12	10	26	29	25	40	32	26	30	32	26	30	
4	18	21	14	32	16	12	23	19	25	23	19	19	19	50	21	49	22	14	22	25	18	15	13	22	30	29	
5	29	24	36	12	13	14	12	13	05	09	10	07	18	..	23	18	12	04	..	..	25	10	26	10	10	11	
6	92	116	20	157	78	79	75	73	45	75	63	71	65	110	76	60	68	67	84	98	116	105	102	102	70	72	
7	06	..	10	13	14	05	05	05	07	07	02	02	02	..	09	09	05	08	13	..	14	..	11	11	10	05	
8	..	..	..	02	01	01	02	03	02	02	02	01	06	05	04	05	02	..	02	..	01	06	01	03	03	04	
9	07	18	09	05	03	..	..	01	01	01	..	01	01	..	..	..	..	..	02	..	04	..	05	01	..	02	
10	10	09	06	07	07	12	11	08	09	09	08	08	16	13	14	14	11	09	05	..	07	08	05	09	11	10	
11	03	02	03	02	04	02	02	04	04	04	04	01	05	06	04	06	02	05	01	..	01	..	06	03	03	04	
12	..	..	01	..	02	..	03	02	04	03	..	02	06	06	03	03	02	02	03	..	..	..	31	28	19	06	
13	31	33	20	27	28	18	14	28	29	24	24	21	18	03	20	19	26	36	27	20	24	23	31	28	19	25	
14	06	08	20	06	07	05	14	10	09	07	07	06	..	03	05	07	05	06	07	24	05	05	02	09	13	06	
15	06	07	04	03	05	10	05	06	09	06	07	04	10	11	10	11	03	..	01	10	04	03	..	03	06	06	
16	..	..	..	..	..	..	..	03	..	..	02	03	..	..	..	..	..	..	..	..	..	..	..	..	07	02	
17	02	02	01	..	01	02	02	01	01	01	02	02	..	07	..	02	..	01	01	..	..	03	..	..	07	02	
18	37	41	43	47	30	31	33	28	22	24	25	25	24	21	24	23	29	35	29	36	43	29	48	36	28	30	
19	11	16	18	14	12	09	08	09	07	08	07	08	12	22	11	10	07	16	11	15	11	11	13	08	07	06	
20	02	03	02	04	07	03	06	05	09	09	09	08	23	12	12	08	08	..	06	..	05	03	04	05	08	10	
21	09	10	11	09	08	10	08	09	07	08	07	08	..	09	11	11	09	11	09	17	06	07	06	10	09	10	
22	05	..	05	07	05	06	07	09	07	06	05	06	08	07	05	11	05	..	06	..	05	..	05	08	05	03	
23	03	..	01	02	01	01	01	01	01	01	..	01	01	..	05	11	05	..	06	..	04	..	02	01	08	03	
24	38	35	31	36	36	41	30	35	30	34	35	36	44	36	32	38	33	37	35	34	27	22	25	31	38	41	
25	09	07	09	02	02	01	02	04	05	05	03	01	11	11	11	21	08	11	07	11	03	09	07	08	07	07	
26	..	..	..	05	09	06	09	11	07	08	08	04	39	15	09	21	09	..	09	..	..	..	..	05	10	10	
27	13	12	05	05	05	06	09	11	07	08	08	04	39	15	09	21	09	..	09	..	..	..	..	05	10	10	
28	32	43	38	46	31	24	24	24	17	21	22	23	..	23	26	12	22	37	33	37	25	12	28	28	26	25	
29	27	27	33	20	21	10	13	10	08	08	08	06	07	09	07	08	07	11	10	26	12	14	..	11	12	08	
30	35	34	34	31	25	16	21	17	21	25	18	21	27	21	23	22	20	22	21	22	22	23	25	19	20	19	
31	05	05	01	05	05	04	03	04	03	04	03	04	05	04	03	03	03	03	04	01	07	02	01	01	04	01	
*	464	517	525	541	404	343	362	371	321	363	324	325	385	419	381	407	345	369	384	427	427	352	394	382	384	388	
†	626	684	733	745	600	522	549	588	499	538	468	483	591	611	557	586	535	580	579	637	611	493	560	592	576	596	

\* The figures in this row give the totals for the month.

† The totals from January 1st.

**Daily Rainfall.**

*Greenwich average 90 years (1815-1904) for March is 1·51 in., and from 1st January 4·85 in.*

**March, 1909.**

Day of Mo.	Caterham (Reservoir)	Chevening Park	Knoekholt (field gau.)	Knoekholt (tower ga.)	MONTHLY GAUGE. FEBRUARY AND MARCH RETURNS.										Chelsham	Warling-ham	Kenley (Hazelea)	Banslead (The Hall)	Banslead (Basing H.)	Burgh Heath	Epsom	Sandersd. (Beech, rd.)	Purley (Bridl, rd.)	Purley (Pump, St.)	Sutton (Waterw.k.)	Sutton (Sew. Wks.)	Bentilton	Carshalton	Wallington	Beddington (Foxley L.)	Beddington (Riverside)	Beddington (Sew. Fm.)	Croydon (Wm. N. rd.)	Croydon (Wob. rd.)	Croydon (Park H. R.)	Croydon (Pk. H. Ho.)			
1	IN. 07	IN. 08	IN. 08	IN. 08	IN. 05	IN. 04	IN. 09	IN. 09	IN. 11	IN. 16	IN. 08	IN. 10	IN. 07	IN. 04	IN. 15	IN. 03	IN. 06	IN. 06	IN. 02	IN. 06	IN. 06	IN. 04	IN. 15	IN. 15	IN. 03	IN. 06	IN. 06	IN. 06	IN. 02	IN. 06	IN. 06	IN. 08	IN. 06	IN. 08	IN. 08				
2	30	31	12	13	30	26	32	34	44	53	21	23	25	21	17	28	28	24	25	22	20	24	22	26	29	24	24	24	24	24	24	24	24	24	24	24			
3	18	34	25	30	27	23	21	23	40	35	20	23	21	23	17	24	22	13	17	35	20	20	22	22	13	17	35	20	20	20	20	20	20	20	20	20			
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
5	05	04	02	02	14	09	13	..	07	16	06	05	15	09	09	10	05	10	05	10	42	07	71	71	66	69	72	08	07	05	82	65	08	13	08	13			
6	49	67	69	37	77	61	100	88	88	105	82	77	58	37	17	20	19	17	20	10	17	17	20	19	17	20	10	17	16	16	16	16	16	16	16	16	16		
7	..	04	08	05	07	09	05	14	21	13	07	04	07	05	06	05	04	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06		
8	12	07	07	08	04	05	04	04	03	04	04	04	07	05	06	05	04	04	04	04	06	06	05	04	06	06	06	06	06	06	06	06	06	06	06	06	06		
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
10	14	15	07	08	13	11	09	04	08	08	10	08	10	06	01	07	07	07	07	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08		
11	03	06	01	01	06	04	06	06	02	02	03	02	03	03	..	03	01	05	02	03	01	05	01	05	02	02	03	01	01	01	01	01	01	01	01	01	01		
12	06	04	03	03	23	22	12	28	15	22	22	24	22	20	20	20	20	20	20	28	28	28	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20		
13	26	22	15	10	09	05	18	03	19	08	04	07	05	05	05	05	06	05	04	04	04	04	04	04	04	04	04	04	04	04	04	04	04	04	04	04	04		
14	07	07	04	03	08	02	02	02	03	06	02	03	02	03	02	01	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	
15	09	13	03	06	08	..	03	..	03	03	06	02	03	02	01	02	02	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01		
16	..	..	..	..	..	..	03	..	03	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
17	..	02	..	..	02	01	03	..	..	01	..	01	..	..	..	..	..	..	..	03	03	01	03	01	03	01	03	01	01	01	01	01	01	01	01	01	01		
18	32	27	30	20	36	31	37	37	40	41	31	33	36	30	24	31	27	34	41	29	22	28	24	27	34	41	29	22	28	24	24	24	24	24	24	24	24		
19	07	19	12	09	07	09	16	16	16	11	07	10	09	09	08	11	09	10	10	07	08	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	
20	12	08	09	06	09	08	04	06	06	06	06	05	07	05	04	04	04	04	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	
21	08	11	11	08	10	07	11	05	07	06	05	03	06	04	06	05	05	05	05	06	06	04	06	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	
22	05	..	06	05	02	03	06	06	07	05	02	01	05	05	05	06	06	06	06	06	06	04	06	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	
23	..	..	..	01	02	..	..	..	..	01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
24	43	39	37	24	42	29	23	23	24	22	27	27	25	24	23	26	22	22	24	27	25	23	24	27	22	24	27	25	23	24	24	24	24	24	24	24	24		
25	09	14	09	07	24	11	10	11	09	11	08	16	10	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
27	04	13	08	05	10	07	12	05	09	06	03	04	03	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05	
28	32	24	31	23	26	22	20	24	26	19	20	24	23	12	11	14	11	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
29	12	08	10	06	08	08	08	07	10	07	07	04	07	08	06	07	05	06	07	06	06	07	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	
30	21	23	24	19	18	18	20	22	20	21	22	24	22	20	20	21	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
31	02	04	02	02	04	02	03	04	04	02	02	02	02	02	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*	373	414	356	270	421	338	404	379	445	451	327	359	366	310	332	345	290	337	400	331	259	333	315	317	336	336	336	336	336	336	336	336	336	336	336	336	336	336	
†	592	628	528	429	639	531	598	570	674	648	504	549	573	453	473	506	423	509	532	499	407	524	495	501	535	535	535	535	535	535	535	535	535	535	535	535	535	535	

\* The figures in this row give the totals for the month.

† The totals from January 1st.



\* The figures in this row give the totals for the month.

Day of Mo.	Croydon (Avondale rd.)	Addington Hills	Addington (Pump St.)	West Wickham	Hayes	Reston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon (The Downs)	Wimbledon (T. Cold rd.)	Raynes Park	New Malden	Worcester Park	Bisher	West Molesey	Surbiton	Kingston (Sew. Wks.)	
1	IN. 11	IN. 09	IN. 03	IN. 27	IN. 27	IN. 08	IN. 05	IN. 04	IN. 21	IN. 10	IN. 13	IN. 06	IN. 06	IN. 06	IN. 18	IN. 06	IN. 05	IN. 10	IN. 03	IN. 04	IN. 05	IN. 08	IN. 03	IN. 12	IN. 30	IN. 05	IN. 04
2	IN. 23	IN. 26	IN. 21	IN. 27	IN. 25	IN. 26	IN. 20	IN. 40	IN. 21	IN. 30	IN. 38	IN. 06	IN. 23	IN. 23	IN. 20	IN. 26	IN. 22	IN. 32	IN. 25	IN. 28	IN. 29	IN. 25	IN. 18	IN. 12	IN. 16	IN. 12	IN. 03
3	IN. 21	IN. 24	IN. 26	IN. 31	IN. 24	IN. 35	IN. 28	IN. 41	IN. 28	IN. 54	IN. 28	IN. 08	IN. 44	IN. 24	IN. 16	IN. 21	IN. 14	IN. 16	IN. 19	IN. 15	IN. 25	IN. 16	IN. 13	IN. 10	IN. 10	IN. 10	IN. 07
4	IN. 12	IN. 08	IN. 11	IN. 20	IN. 24	IN. 08	IN. 03	IN. 05	IN. 08	IN. 08	IN. 08	IN. 05	IN. 04	IN. 06	IN. 07	IN. 10	IN. 03	IN. 09	IN. 08	IN. 06	IN. 06	IN. 12	IN. 10	IN. 08	IN. 10	IN. 10	IN. 12
5	IN. 79	IN. 73	IN. 81	IN. 77	IN. 76	IN. 85	IN. 67	IN. 69	IN. 59	IN. 65	IN. 10	IN. 08	IN. 68	IN. 62	IN. 65	IN. 44	IN. 40	IN. 42	IN. 45	IN. 50	IN. 57	IN. 72	IN. 64	IN. 67	IN. 28	IN. 62	IN. 62
6	IN. 09	IN. 09	IN. 09	IN. 10	IN. 15	IN. 08	IN. 08	IN. 08	IN. 06	IN. 06	IN. 08	IN. 05	IN. 04	IN. 12	IN. 19	IN. 19	IN. 17	IN. 16	IN. 16	IN. 15	IN. 15	IN. 20	IN. 09	IN. 10	IN. 10	IN. 11	IN. 11
7	IN. 06	IN. 05	IN. 05	IN. 05	IN. 03	IN. 14	IN. 06	IN. 06	IN. 08	IN. 07	IN. 06	IN. 05	IN. 04	IN. 08	IN. 05	IN. 05	IN. 06	IN. 06	IN. 05	IN. 04	IN. 05	IN. 06	IN. 04	IN. 04	IN. 06	IN. 06	IN. 06
8	IN. 02	IN. 02	IN. 02	IN. 02	IN. 03	IN. 05	IN. 02	IN. 02	IN. 08	IN. 02	IN. 02	IN. 05	IN. 01	IN. 01	IN. 06	IN. 05	IN. 04	IN. 01	IN. 01	IN. 01	IN. 01	IN. 04	IN. 03	IN. 02	IN. 02	IN. 02	IN. 02
9	IN. 10	IN. 10	IN. 11	IN. 12	IN. 11	IN. 12	IN. 08	IN. 10	IN. 08	IN. 06	IN. 07	IN. 07	IN. 05	IN. 01	IN. 01	IN. 03	IN. 04	IN. 06	IN. 05	IN. 05	IN. 04	IN. 02	IN. 02	IN. 01	IN. 01	IN. 01	IN. 01
10	IN. 03	IN. 03	IN. 03	IN. 04	IN. 05	IN. 05	IN. 05	IN. 15	IN. 04	IN. 02	IN. 03	IN. 02	IN. 01	IN. 02	IN. 01	IN. 03	IN. 04	IN. 06	IN. 05	IN. 05	IN. 04	IN. 02	IN. 02	IN. 01	IN. 01	IN. 01	IN. 01
11	IN. 02	IN. 02	IN. 01	IN. 01	IN. 03	IN. 02	IN. 02	IN. 01	IN. 01	IN. 02	IN. 02	IN. 02	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 02	IN. 02	IN. 01	IN. 01	IN. 01	IN. 01
12	IN. 22	IN. 21	IN. 21	IN. 25	IN. 23	IN. 25	IN. 19	IN. 18	IN. 15	IN. 22	IN. 15	IN. 18	IN. 20	IN. 20	IN. 18	IN. 15	IN. 15	IN. 19	IN. 17	IN. 17	IN. 16	IN. 18	IN. 16	IN. 14	IN. 17	IN. 18	IN. 18
13	IN. 07	IN. 05	IN. 05	IN. 05	IN. 05	IN. 08	IN. 06	IN. 03	IN. 03	IN. 04	IN. 05	IN. 08	IN. 04	IN. 05	IN. 08	IN. 02	IN. 04	IN. 06	IN. 06	IN. 05	IN. 03	IN. 03	IN. 02	IN. 03	IN. 04	IN. 06	IN. 06
14	IN. 03	IN. 02	IN. 03	IN. 06	IN. 06	IN. 08	IN. 07	IN. 04	IN. 08	IN. 03	IN. 04	IN. 09	IN. 02	IN. 02	IN. 01	IN. 02	IN. 02	IN. 02	IN. 01	IN. 01	IN. 01	IN. 03	IN. 03	IN. 01	IN. 01	IN. 01	IN. 01
15	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01
16	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 02	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01
17	IN. 31	IN. 28	IN. 37	IN. 37	IN. 30	IN. 28	IN. 23	IN. 15	IN. 15	IN. 20	IN. 21	IN. 22	IN. 18	IN. 20	IN. 27	IN. 14	IN. 11	IN. 14	IN. 12	IN. 02	IN. 12	IN. 20	IN. 14	IN. 17	IN. 14	IN. 13	IN. 13
18	IN. 08	IN. 06	IN. 05	IN. 06	IN. 08	IN. 12	IN. 11	IN. 06	IN. 06	IN. 05	IN. 06	IN. 07	IN. 04	IN. 06	IN. 10	IN. 09	IN. 06	IN. 10	IN. 07	IN. 08	IN. 09	IN. 08	IN. 17	IN. 12	IN. 09	IN. 14	IN. 14
19	IN. 05	IN. 05	IN. 07	IN. 11	IN. 06	IN. 11	IN. 06	IN. 07	IN. 04	IN. 05	IN. 07	IN. 04	IN. 03	IN. 05	IN. 05	IN. 04	IN. 04	IN. 05	IN. 04	IN. 03	IN. 02	IN. 03	IN. 02	IN. 01	IN. 02	IN. 02	IN. 02
20	IN. 05	IN. 05	IN. 04	IN. 11	IN. 05	IN. 05	IN. 07	IN. 07	IN. 04	IN. 05	IN. 04	IN. 06	IN. 06	IN. 06	IN. 05	IN. 07	IN. 06	IN. 07	IN. 07	IN. 06	IN. 06	IN. 07	IN. 07	IN. 07	IN. 07	IN. 07	IN. 06
21	IN. 04	IN. 03	IN. 02	IN. 06	IN. 09	IN. 05	IN. 04	IN. 04	IN. 10	IN. 08	IN. 09	IN. 08	IN. 08	IN. 07	IN. 06	IN. 06	IN. 07	IN. 06	IN. 08	IN. 07	IN. 05	IN. 05	IN. 08	IN. 07	IN. 09	IN. 08	IN. 08
22	IN. 27	IN. 25	IN. 27	IN. 29	IN. 23	IN. 25	IN. 20	IN. 14	IN. 20	IN. 21	IN. 22	IN. 26	IN. 24	IN. 26	IN. 27	IN. 25	IN. 24	IN. 25	IN. 26	IN. 23	IN. 20	IN. 24	IN. 20	IN. 21	IN. 24	IN. 24	IN. 24
23	IN. 09	IN. 08	IN. 09	IN. 12	IN. 08	IN. 07	IN. 04	IN. 04	IN. 04	IN. 06	IN. 05	IN. 09	IN. 05	IN. 08	IN. 11	IN. 07	IN. 07	IN. 11	IN. 10	IN. 12	IN. 08	IN. 09	IN. 09	IN. 09	IN. 08	IN. 12	IN. 12
24	IN. 05	IN. 04	IN. 04	IN. 04	IN. 04	IN. 03	IN. 02	IN. 01	IN. 03	IN. 04	IN. 03	IN. 04	IN. 11	IN. 09	IN. 07	IN. 11	IN. 09	IN. 09	IN. 15	IN. 08	IN. 06	IN. 07	IN. 05	IN. 08	IN. 09	IN. 15	IN. 15
25	IN. 19	IN. 16	IN. 21	IN. 18	IN. 06	IN. 22	IN. 20	IN. 09	IN. 09	IN. 10	IN. 10	IN. 10	IN. 08	IN. 12	IN. 11	IN. 12	IN. 14	IN. 16	IN. 12	IN. 14	IN. 11	IN. 16	IN. 14	IN. 18	IN. 12	IN. 12	IN. 12
26	IN. 06	IN. 08	IN. 05	IN. 04	IN. 10	IN. 04	IN. 04	IN. 05	IN. 01	IN. 03	IN. 03	IN. 05	IN. 03	IN. 05	IN. 05	IN. 08	IN. 08	IN. 09	IN. 35	IN. 09	IN. 08	IN. 11	IN. 16	IN. 24	IN. 12	IN. 13	IN. 13
27	IN. 30	IN. 30	IN. 29	IN. 46	IN. 38	IN. 45	IN. 32	IN. 30	IN. 29	IN. 30	IN. 40	IN. 28	IN. 33	IN. 33	IN. 30	IN. 29	IN. 26	IN. 28	IN. 05	IN. 27	IN. 21	IN. 23	IN. 19	IN. 21	IN. 24	IN. 28	IN. 28
28	IN. 04	IN. 02	IN. 02	IN. 02	IN. 04	IN. 02	IN. 02	IN. 01	IN. 01	IN. 03	IN. 03	IN. 02	IN. 02	IN. 02	IN. 02	IN. 02	IN. 01	IN. 02	IN. 02	IN. 01	IN. 01	IN. 02	IN. 02	IN. 01	IN. 01	IN. 01	IN. 01
*	IN. 356	IN. 341	IN. 356	IN. 399	IN. 392	IN. 393	IN. 323	IN. 327	IN. 275	IN. 288	IN. 340	IN. 411	IN. 328	IN. 313	IN. 328	IN. 301	IN. 253	IN. 313	IN. 295	IN. 272	IN. 259	IN. 326	IN. 275	IN. 284	IN. 264	IN. 264	IN. 264
†	IN. 556	IN. 557	IN. 559	IN. 629	IN. 589	IN. 591	IN. 513	IN. 495	IN. 436	IN. 487	IN. 535	IN. 643	IN. 463	IN. 496	IN. 463	IN. 462	IN. 381	IN. 452	IN. 447	IN. 400	IN. 371	IN. 471	IN. 365	IN. 390	IN. 386	IN. 386	IN. 386

\* The figures in this row give the totals for the month.

† The totals from January 1st.

# Daily Rainfall.

Greenwich average 90 years (1815-1904) for March is 1.51 in., and from 1st January 4.85 in.

March, 1909.

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putney Heath	Wandsworth	Streatham	West Norwood	Upper Norwood	Forest Hill (Dartm. rd.)	Forest Hill (Hon. O'rd.)	Forest Hill (Cemetery)	Willing- ton	Dartford	Bilham	Nunhead	East Dulwich	Brookwell Park	Clapham Park	Battersea Park	Battersea (Waterw.)	Cambe'well (The Green)	Cambe'well (Leytongsq.)	Telegraph Hill	Greenwich	Deptford	Southwark	
1	IN. .05	IN. .19	IN. .03	IN. .02	IN. .07	IN. .10	IN. .06	IN. .07	IN. .06	IN. .04	IN. .13	IN. .05	IN. .06	IN. .02	IN. .23	IN. .05	IN. .05	IN. .26	IN. .40	IN. .03	IN. .16	IN. .09	IN. .04	IN. .04	IN. .04	IN. .02	IN. .02
2	IN. .28	IN. .11	IN. .26	IN. .35	IN. .35	IN. .18	IN. .22	IN. .22	IN. .24	IN. .14	IN. .05	IN. .34	IN. .44	IN. .23	IN. .16	IN. .24	IN. .26	IN. .26	IN. .40	IN. .19	IN. .07	IN. .01	IN. .01	IN. .01	IN. .15	IN. .19	IN. .40
3	IN. .10	IN. .23	IN. .22	IN. .15	IN. .28	IN. .24	IN. .22	IN. .25	IN. .05	IN. .17	IN. .08	IN. .29	IN. .34	IN. .23	IN. .12	IN. .26	IN. .26	IN. .16	IN. .20	IN. .04	IN. .03	IN. .02	IN. .02	IN. .02	IN. .25	IN. .15	IN. .12
4	IN. .15	IN. .38	IN. .07	IN. .10	IN. .05	IN. .03	IN. .06	IN. .06	IN. .06	IN. .04	IN. .06	IN. .04	IN. .10	IN. .04	IN. .09	IN. .09	IN. .05	IN. .20	IN. .09	IN. .03	IN. .10	IN. .08	IN. .04	IN. .05	IN. .05	IN. .01	IN. .01
5	IN. .77	IN. .56	IN. .47	IN. .39	IN. .75	IN. .46	IN. .51	IN. .60	IN. .69	IN. .38	IN. .45	IN. .52	IN. .55	IN. .50	IN. .42	IN. .60	IN. .21	IN. .39	IN. .32	IN. .32	IN. .37	IN. .51	IN. .62	IN. .62	IN. .62	IN. .28	IN. .28
6	IN. .10	IN. .37	IN. .04	IN. .13	IN. .20	IN. .17	IN. .20	IN. .20	IN. .24	IN. .20	IN. .17	IN. .09	IN. .16	IN. .25	IN. .17	IN. .21	IN. .16	IN. .28	IN. .23	IN. .23	IN. .13	IN. .13	IN. .02	IN. .05	IN. .17	IN. .08	IN. .08
7	IN. .08	IN. .05	IN. .04	IN. .04	IN. .06	IN. .06	IN. .07	IN. .06	IN. .06	IN. .05	IN. .05	IN. .04	IN. .10	IN. .05	IN. .04	IN. .07	IN. .07	IN. .06	IN. .03	IN. .02	IN. .06	IN. .02	IN. .02	IN. .02	IN. .03	IN. .03	IN. .02
8	IN. .02	IN. .05	IN. .03	IN. .04	IN. .05	IN. .07	IN. .05	IN. .05	IN. .06	IN. .03	IN. .01	IN. .01	IN. .07	IN. .06	IN. .05	IN. .05	IN. .05	IN. .04	IN. .03	IN. .01	IN. .06	IN. .02	IN. .01	IN. .01	IN. .06	IN. .04	IN. .03
9	IN. .05	IN. .05	IN. .03	IN. .02	IN. .04	IN. .07	IN. .05	IN. .05	IN. .06	IN. .02	IN. .01	IN. .03	IN. .03	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01
10	IN. .05	IN. .05	IN. .03	IN. .02	IN. .04	IN. .07	IN. .05	IN. .05	IN. .06	IN. .02	IN. .01	IN. .03	IN. .03	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01
11	IN. .05	IN. .05	IN. .03	IN. .02	IN. .04	IN. .07	IN. .05	IN. .05	IN. .06	IN. .02	IN. .01	IN. .03	IN. .03	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01	IN. .01
12	IN. .13	IN. .11	IN. .06	IN. .14	IN. .12	IN. .16	IN. .18	IN. .19	IN. .05	IN. .15	IN. .17	IN. .10	IN. .13	IN. .08	IN. .01	IN. .20	IN. .20	IN. .19	IN. .14	IN. .14	IN. .12	IN. .15	IN. .15	IN. .14	IN. .15	IN. .10	IN. .10
13	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
14	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
15	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
16	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
17	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
18	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
19	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
20	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
21	IN. .04	IN. .06	IN. .20	IN. .06	IN. .10	IN. .04	IN. .08	IN. .06	IN. .16	IN. .03	IN. .02	IN. .03	IN. .04	IN. .08	IN. .14	IN. .06	IN. .06	IN. .19	IN. .14	IN. .13	IN. .04	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03
22	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
23	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
24	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
25	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
26	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
27	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
28	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
29	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
30	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
31	IN. .08	IN. .09	IN. .09	IN. .08	IN. .07	IN. .07	IN. .07	IN. .07	IN. .11	IN. .09	IN. .08	IN. .05	IN. .04	IN. .05	IN. .06	IN. .09	IN. .09	IN. .07	IN. .06	IN. .04	IN. .11	IN. .08	IN. .08	IN. .10	IN. .09	IN. .07	IN. .05
•	3.24	3.48	2.74	2.73	3.52	2.77	3.12	3.17	3.15	2.63	2.36	2.75	3.31	2.81	2.72	3.35	2.62	3.27	2.11	2.31	2.07	2.07	2.98	2.70	3.92	2.91	2.91
+	4.34	4.49	3.97	4.11	4.99	4.04	4.77	4.90	4.90	4.23	3.57	4.46	5.23	4.47	3.70	5.05	3.94	4.61	4.15	3.29	2.92	2.92	4.47	3.92	3.92	2.91	2.91

RECORD CEASED.

GATGE BROKEN.

## NOTES.

MARCH, 1909.

A VERY inclement month throughout. The first week was particularly cold, and the sheltered thermometer was extremely low, the minimum on the 5th being at Beddington  $7^{\circ}6$ , and at Epsom  $9^{\circ}1$ , and below  $20^{\circ}$  throughout the district. On the same day there was an icicle, 20 in. long, hanging from the guttering at the West Norwood Station. Snow fell during this period, the depths being at Ashstead  $1\frac{1}{2}$  in. on 1st, and 4 in. on 2nd; at Croydon (Avondale Road)  $2\frac{1}{2}$  in. on 1st,  $1\frac{1}{8}$  in. on 2nd, 3 in. on 3rd, and  $2\frac{1}{4}$  in. on 4th; at Redhill  $3\frac{1}{2}$  in. in the night of 1st-2nd; and at Sevenoaks 6 in. on 3rd, and 3 in. on 4th. The latter half of the month was warmer, the wind, which had been between the N. and E., becoming more southerly. As may be imagined, the month has been extremely unhealthy owing to diseases of the lungs through the influenza epidemic. It has been the coldest March since 1900, and there have been only four colder during the last 25 years. It is also the wettest March since 1897, and there have been only two wetter during the last 25 years, and during the last 34 years there has only been one month which has an equal number of rainy days, *viz.* 26, and this month was Jan., 1894. With respect to agricultural and garden produce everything is very backward. At Nutfield the first peach-blossom opened on 27th, and the first plum on 20th, both 10 days late, and the almond at Kew blossomed on 31st. A wasp was seen on the window-pane at West Norwood on 21st. At Purley the crocus flowered on 22nd; whilst at Wallington the yellow crocus came into blossom on 17th, the purple on 21st, and the white on 22nd. Throughout the district the snowdrop was in flower at the end of the month. There was hail throughout the district on 7th, and on this day, at Epsom, was seen a remarkable rainbow, white with two inner spectrum bows, at 4 p.m. Solar haloes were observed at Greenwich on 2nd, 3rd, 4th, 7th, 8th, 13th, 20th, and 31st, with parhelia on 8th; at Epsom on 4th, 5th, 15th, and 27th; and at Purley on 7th and 16th: whilst lunar ones were seen at Greenwich on 2nd, 5th, 6th, and 29th, with paraselene on 2nd; at Epsom on 2nd, 3rd, 5th, 6th, and 29th; at Beddington (Riverside) on 6th and 29th; and at Purley on 29th. At Epsom sheet lightning was seen on 2nd and 14th; a bat on 29th, and a swallow on 30th. The rainfall is between  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in. above the average. The mean temperature is about  $3^{\circ}2$  below the average, and was at Worcester Park  $39^{\circ}1$ , at Wallington and Croydon (Park Hill House)  $39^{\circ}0$ , at Epsom  $38^{\circ}1$ , and at Warlingham  $37^{\circ}4$ . The mean barometrical reading, reduced to  $32^{\circ}$  F. and sea-level, *viz.* 29.516 in., is the lowest in the Wallington record. At Croydon (Park Hill House) percolation through the chalk gauge was 2.406 in., and the evaporation 0.415 in. There were recorded at Wallington 60.9 hours of sunlight, which is 54.5 hours, or 14 per cent., below the March average of the 20 years 1886-1905, and is the lowest March value.

F. CAMPBELL-BAYARD, F.R.Met.Soc., *Hon. Sec.*

WALLINGTON, SURREY, April 24th, 1909.



## NOTES.

APRIL, 1909.

THE first eleven days were brilliantly sunny, but with cold nights then followed a period of unsettled weather, with heavy rains on 19th, 22nd, 27th and 29th, accompanied with hail, snow, and sleet on the latter date. The rain on the 19th was generally heavy, the heaviest amount being .71 in. at Abinger Hall. Under the circumstances, it will not be surprising to learn that the month was a very unhealthy one, catarrhal affections and scarlet fever being very prevalent. Thunder was heard on 19th and 29th in most places, and at Kew and in some other parts there was a thunderstorm on 27th. Solar haloes were observed at Greenwich on 3rd, 4th, 16th, 19th, 21st, 22nd, and 29th; at Epsom on 3rd, 4th, 12th, 19th, and 21st; at Purley on 3rd, 16th, 19th, and 25th; at Betchworth on 3rd and 21st; at Wallington on 4th and 21st; and at Upper Gatton on 19th: and parhelion were noted at Greenwich on 24th, 28th, and 30th. Lunar haloes were seen at Greenwich on 2nd, 3rd, 25th, 26th, and 28th; at Epsom on the 2nd, 3rd, 12th, 19th, and 21st; at Nutfield on 2nd and 25th; and at Upper Gatton, Benhilton, Wallington, and Beddington on 2nd. A rainbow was noted at Beddington on 23rd. At Epsom the bee was seen on 3rd, the small meadow brown butterfly on 4th, the brimstone butterfly on 7th, the red admiral butterfly on 8th, and the cabbage white butterfly on 21st. The cuckoo was heard at Chislehurst on 9th, at Croydon on 15th, at Nutfield on 16th, at Abinger on 17th, at Upper Gatton and Epsom on 18th, and Bromley on 23rd. The nightingale was heard at Abinger on 17th, Nutfield on 20th, and Upper Gatton on 27th. The wryneck was heard at Nutfield on 6th; and the chiff-chaff at Croydon on 18th; and swallows were seen at Nutfield and Abinger on 10th, at Chislehurst on 14th, and Bromley on 21st. With respect to the flowering of trees, the almond blossomed at Wallington and Beddington on 5th, and at Epsom on 6th; the apricot at Epsom on 9th, the nectarine there on 16th, and the greengage there on 21st; the plum at Kew on 17th, at Wallington on 21st, and Epsom on 22nd; the cherry at Wallington on 23rd; the blackthorn at Epsom on 24th; the damson at Epsom on 25th; and the pear at Kew on 20th, at Wallington on 24th, and Epsom on 28th. The month's rainfall is between  $\frac{1}{8}$  and  $\frac{1}{4}$  in. above the average. The mean temperature is nearly  $2^{\circ}$  above the average, and was at Worcester Park  $49^{\circ}4$ , at Wallington and Croydon (Park Hill House)  $49^{\circ}2$ , at Epsom  $48^{\circ}4$ , and at Warlingham  $47^{\circ}9$ . At Croydon (Park Hill House) evaporation from the floating evaporator was 2.59 in., which is over  $\frac{3}{4}$  in. above the average; and percolation through the chalk gauge was .266 in., and was about half the average, and stopped on the 18th. There were recorded at Wallington 218.5 hours of sunlight, which is 60.9 hours, or 15 per cent. above the April average of the 20 years 1886-1905. There have been only two ApriIs, *viz.* in 1892 and 1893, more sunny.

F. CAMPBELL-BAYARD, F.R.Met.Soc., *Hon. Sec.*

WALLINGTON, SURREY, *May 17th, 1909.*

**Daily Rainfall.**

*Greenwich average 90 years (1815-1904) for April as 1·60 in., and from 1st January 6·45 in.*

**April, 1909.**

Day of Mo.	Holmbury St. Mary	Abinger (Rectory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Reigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westersham (Hill Est.)	Westersham (Town)	Mersham	Upper Gatton	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)
1	..	..	..	..	..	01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	03	02	03	04	04	04	03	03	03	02	01	..	03	02	02	02	03	04	04	01	10	02	02	02	02	02
12	21	11	19	24	15	08	10	16	14	14	07	06	13	10	12	10	12	16	14	09	13	16	15	11	15	13
13	02	09	07	04	02	..	04	..	02	01	04	02	05	..	..	01	..	..	..	..	02	..	..	01	..	01
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	04	..	03	02	03	03	04	04	03	04	..	02	03	04	02	03	04	04	04	02	..	01	..	03	03	04
18	68	58	71	62	49	43	48	57	41	44	40	36	36	54	33	35	50	58	52	57	52	48	52	56	53	56
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	32	39	36	39	33	22	23	25	19	26	24	22	23	23	19	21	24	29	37	33	32	21	29	25	27	28
21	22	22	26	23	20	12	20	17	13	12	09	10	12	20	12	13	15	18	21	21	20	19	13	22	22	22
22	02	01	01	..	01	..	03	02	..	..	..	01	..	..	..	..	..	02	02	02	16	08	07	01	01	01
23	..	01	20	16	12	09	06	13	10	10	15	08	11	11	08	12	14	15	16	15	16	08	10	13	12	13
24	14	09	20	15	18	07	13	07	08	09	12	15	12	15	11	19	18	20	18	26	26	16	17	12	12	14
25	06	11	15	15	18	12	13	12	12	12	15	14	14	16	16	18	16	19	21	22	17	14	13	21	21	17
26	17	19	26	26	23	16	22	19	21	21	19	14	19	16	16	18	16	19	21	22	22	21	23	27	27	36
27	33	33	40	37	34	31	26	27	26	25	25	25	35	25	30	25	30	42	42	27	19	21	21	23	27	36
28	05	05	09	08	09	09	09	11	11	11	09	05	21	09	20	20	09	10	10	09	08	11	04	09	11	14
29	29	29	27	26	23	16	19	21	17	17	16	14	13	18	16	17	19	24	24	27	19	21	21	23	27	36
30	05	05	09	08	09	09	09	11	11	11	09	05	21	09	20	20	09	10	10	09	08	11	04	09	11	14
*	2·29	2·19	2·79	2·60	2·23	1·65	1·92	2·01	1·71	1·79	1·65	1·46	1·93	1·89	1·65	1·79	1·95	2·42	2·18	2·29	2·07	1·85	1·84	2·04	2·10	2·13
†	8·55	9·03	10·12	10·05	8·23	6·87	7·41	7·89	6·70	7·17	6·33	6·29	7·84	8·00	7·22	7·65	7·30	8·22	7·97	8·66	8·18	6·78	7·44	7·96	7·86	8·09

\* The figures in this row give the totals for the month.

† The totals from January 1st.

# Daily Rainfall.

Greenwich average 90 years (1815-1904) for April is 1·60 in., and from 1st January 6·45 in.

April, 1909.

Day of Mo.	Caterham (Reservoir)	Chevening Park	Knockholt (field gan.)	Knockholt (tower ga.)	Chelsham	Warling-ham	Kenley (Hazelea)	Banstead (The Hall)	Banstead (Basing H.)	Burgh Heath	Epsom	Sanderstead (Beech, rd.)	Purley (Ridddl. rd.)	Purley (Pump, St.)	Sutton (Waterwrk.)	Sutton (Sew. Wks.)	Benhillton	Carshalton	Wallington	Beddington (Foxley L.)	Beddington (Riverside)	Beddington (Sew. Em.)	Croydon (Wm N. rd.)	Croydon (Wob. rd.)	Croydon (Park H. R.)	Croydon (Pk. H. Ho.)
1	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	03	06	01	01	03	10	02	02	02	03	01	02	02	02	01	02	02	02	02	02	02	01	02	02	02	03
13	15	09	07	05	05	03	08	10	08	09	01	08	06	12	10	12	11	08	08	13	11	09	09	10	10	13
14	04	01	05	03	..	..	..	05	07	04	02	01	05	..	01	02	01	02	01	02	01	..	01	01	..	01
15	..	..	..	..	..	..	..	..	..	03	..	..	01	..	..	..	01	..	..	..	..	01	..	..	..	..
16	..	01	03	03	..	05	05	03	03	03	01	03	06	06	01	..	01	..	02	04	02	..	02	01	02	04
17	03	03	03	..	..	..	..	03	03	03	01	03	06	..	..	..	01	..	..	..	..	..	..	..	..	..
18	..	..	44	42	..	53	56	60	57	56	44	51	54	50	55	42	48	53	50	51	48	43	50	47	44	50
19	52	48	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	26	29	32	24	26	25	..	20	14	18	16	23	31	23	17	22	19	19	23
21	27	23	24	15	11	29	27	26	17	19	18	20	20	23	13	13	15	13	16	23	17	13	18	17	18	21
22	16	15	12	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	23	15	..	..	..	..	..	..	01	..	12	02	05	05	11	04	07	08	05	02	03	05	04	05	05	04
24	..	..	..	..	..	01	02	11	11	10	27	06	11	12	11	14	11	11	10	13	12	08	13	13	10	10
25	14	17	12	11	12	12	13	11	11	10	27	06	11	12	11	14	11	37	08	05	12	08	32	13	10	28
26	26	13	07	06	17	17	09	27	27	18	18	14	12	13	12	11	37	39	44	18	38	43	32	27	24	28
27	15	13	15	14	21	22	22	17	18	22	14	11	17	15	12	12	13	12	12	14	13	12	11	11	13	26
28	16	17	15	14	21	22	22	17	18	22	14	11	17	23	23	23	26	19	19	19	20	12	20	21	22	26
29	34	28	33	27	36	36	23	19	21	21	19	27	25	23	23	24	26	19	19	24	20	12	20	21	22	26
30	16	18	12	10	12	12	12	09	09	09	11	09	17	14	12	11	10	08	10	14	10	13	10	10	12	09
*	2·15	1·99	1·75	1·48	1·82	2·18	1·99	2·08	2·09	2·09	2·01	1·80	2·06	2·01	2·27	1·61	2·01	1·92	2·10	2·05	1·99	1·77	1·95	1·83	1·82	2·05
†	8·07	8·27	7·03	5·77	8·86	8·57	7·30	8·06	7·79	8·83	8·49	6·84	7·55	7·74	6·80	6·34	7·07	6·15	7·19	7·37	6·98	5·84	7·19	6·78	6·83	7·40

\* The figures in this row give the totals for the month.

† The totals from January 1st.



Day of Mo.	Oroydon (Avondale rd.)	Addington Hills	Addington (Pump, St.)	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon (The Downs)	Wimbledon (T. Pold rd.)	Raynes Park	New Malden	Worcester Park	Escher	West Molesey	Surbiton	Kingston (Sew. Wks.)
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										
25																										
26																										
27																										
28																										
29																										
30																										
*	1.94	2.00	1.94	1.96	1.76	1.83	1.56	1.41	1.48	1.56	1.51	2.14	1.84	2.13	2.01	1.57	1.41	1.57	1.55	1.34	1.25	1.47	1.37	1.47	1.57	1.77
†	7.50	7.57	7.53	8.25	7.65	7.74	6.69	6.36	5.84	6.43	6.86	8.57	6.47	7.09	6.64	6.19	5.22	6.09	6.02	5.34	4.96	6.18	5.02	5.37	5.43	5.79

\* The figures in this row give the totals for the month.

† The totals from January 1st.

Daily Rainfall.

Greenwich average 90 years (1815-1904) for April is 1·60 in., and from 1st January 6·45 in.

April, 1909.

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putney Heath	Wandsworth Common	Streatham	West Norwood	Upper Norwood	Forest Hill (Dartm. rd.)	Forest Hill (Hon. O. rd.)	Forest Hill (Cemetery)	Wilmington	Dartford	Eltham	Nunhead	East Dulwich	Brookwell Park	Clapham Park	Battersea Park	Battersea (Waterwk.)	Cambe'well (The Green)	Cambe'well (Leytonsq.)	Telegraph Hill	Greenwich	Deptford	Southwark Park
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	·02	·04	·06	·02	·06	·03	·05	·05	·05	·03	·01	·01	·02	·01	·02	·02	·04	·04	·04	·02	·01	·01	·02	·03	·02	·02
13	·10	·12	·19	·16	·08	·11	·15	·14	·13	·12	·09	·12	·12	·15	·13	·11	·11	·15	·14	·13	·15	·12	·14	·17	·13	·10
14	·06	..	·02	·02	·03	·02	·02	·03	..	·01	..	·02	..	..	·01	·04	·04	..	..	..	..	·01	..	·01	·01	·01
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	·01	·01	·01	..	..	..	..	..	..	..	..	..
16	·03	·02	·07	·02	·05	·07	·08	·12	·09	·03	..	·02	·05	·09	·01	·01	·01	·01	·07	·02	·02	·01	·02	·01	·01	·03
17	·01	·02	·03	·02	·01	·01	·01	..	..	·01	..	·04	·05	·09	·01	·01	·01	..	·03	..	..	·01	·02	·01	..	..
18	..	..	·45	·42	·47	·47	·55	·50	·49	·49	·45	·25	·31	·33	·53	·63	·63	·52	·51	·52	·37	·48	·48	·47	·46	·42
19	·48	·41	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22	·17	·18	·17	·14	·03	·09	·12	·14	·12	·12	·11	·10	·08	·11	·10	·11	·11	·09	·13	·11	·09	·04	·11	·11	·09	·09
23	·11	·12	·10	·13	·09	·11	·13	·12	·14	·11	·06	·07	·15	·14	·11	·11	·13	·11	·14	·10	·11	·11	·11	·13	·10	·08
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	·04	·02	·02	·01	..	..	..	..	..	..	..	..
25	..	..	..	..	..	..	·07	·10	·10	·14	·03	..	·02	·02	·04	..	..	..	·08	·08	..	·07	·04	·08	·05	·05
26	·07	·17	·15	·13	·08	·12	·10	·27	·05	·15	·13	·11	·10	·10	·20	·09	·09	·26	·26	·08	·10	·07	·11	·10	·08	·14
27	·30	·16	·45	·23	·16	·16	·23	·18	·39	·29	..	·10	·12	·27	·24	·15	·06	·19	·19	·25	·13	·11	·23	·27	·30	·11
28	·05	·01	·03	·02	·01	·05	·07	·08	·06	·04	·02	·07	·06	·03	·02	·03	·03	·03	..	·01	..	..	·02	·02	..	..
29	·11	·12	·22	·16	·24	·18	·22	·20	·22	·21	·10	·24	·34	·21	·19	·22	·22	·24	·16	·17	·28	·29	·18	·22	·18	·18
30	·13	·08	·09	·07	·13	·15	·07	·08	·08	·08	·03	·09	·10	·07	·05	·07	·07	·07	·07	·06	·06	·06	·05	·08	·06	·06
+	1·64	1·45	2·03	1·54	1·44	1·57	1·87	2·01	1·92	1·83	1·03	1·24	1·52	1·53	1·66	1·66	1·73	1·59	1·73	1·47	1·30	1·31	1·53	1·71	1·48	1·23
+	5·98	5·94	6·00	5·65	6·43	5·61	6·64	6·91	6·82	6·06	4·60	5·70	6·75	6·00	5·36	6·71	5·53	5·53	6·34	5·62	4·59	4·23	..	6·18	5·40	4·14

RECORD CEASED.

4 The totals from January 1st.

Day of Mo.	Holmbury St. Mary	Abinger (Rectory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Reigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westerham (Hill Est.)	Westerham (Town)	Mersham	Upper Gallon	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)	
1	.09	.08	.09	.07	.06	.03	.03	.03	.02	.02	.01	IN.	IN.	IN.	IN.	IN.	IN.	IN.	.01	.02	.05	.08	.05	IN.	IN.	IN.	IN.
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13	.14	.20	.27	.12	.14	.17	.18	.21	.01	.02	.26	.24	.07	.08	.13	.12	.28	.02	.15	.16	.05	.14	.13	..	.24	.25	.21
14	.01	.01	.06	.03	.02	..	.02	.01	.02	.02	.02	.01	..	..	..	..	..	..	..	..	.01	..	..	..	..	..	.01
15	..	.05	.09	.08	.07	..	.01	.02	.02	.02	.13	.14	.17	.19	.14	.15	.10	.09	.06	.08	.08	..	..	..	..	..	..
16	.06	.07	.09	.08	.07	.08	.08	.07	.10	.11	.13	.14	.17	.19	.14	.15	.10	.09	.06	.08	.08	..	..	..	..	..	..
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	.19	.30	.27	.19	.15	.14	.20	.19	.26	.30	.27	.16	.24	.21	.16	.22	.16	.23	.20	.06	.11	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
24	.62	.60	.69	.57	.66	.68	.72	.56	.47	.46	.43	.39	.40	.45	.39	.42	.39	.54	.52	.53	.52	.55	.58	..	.50	.44	.46
25	.09	.10	.30	.13	.10	.08	.14	.12	.10	.10	.11	.14	.13	.19	.13	.15	.09	.08	.20	.18	.08	.10	.07	..	.10	.10	.09
26	.42	.25	.25	.43	.31	.27	.34	.29	.22	.25	.21	.16	.32	.27	.28	.28	.24	.35	.30	.34	.36	.44	.30	..	.25	.40	.40
27	.09	.10	.10	.18	.06	.03	.05	.02	.05	.03	.05	.03	.03	.09	.02	..	.03	.04	.02	.06	.11	.07	.13	..	.03	.01	.01
28	.14	.10	.11	.12	.09	.07	.10	.11	.10	.09	.09	.09	.13	.09	.11	.12	.09	.11	.08	.10	.09	.07	.08	..	.10	.10	.09
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*	1.85	1.86	2.24	1.92	1.67	1.56	1.87	1.64	1.64	1.69	1.59	1.43	1.49	1.48	1.36	1.46	1.38	1.71	1.55	1.56	1.58	1.48	1.41	..	1.50	1.54	1.52
†	10.40	10.89	12.36	11.97	9.90	8.43	9.28	9.53	8.34	8.86	7.92	7.72	9.33	9.48	8.58	9.11	8.68	9.93	9.52	10.22	9.76	8.26	8.85	..	9.46	9.40	9.61

\* The figures in this row give the totals for the month.

† The totals from January 1st.



Day of Mo.	Caterham (Reservoir)	Cherishing Park	Knoekholt (field ga.)	Knoekholt (tower ga.)	Chesham	Warling- ham	Kenley (Hazele)	Banstead (The Hall)	Banstead (Basing H.)	Burgh Heath	Epsom	Sandersd. (Beech. rd.)	Purley (Rid. rd.)	Purley (Pump. St.)	Sutton (Waterwk.)	Sutton (Sew. Wks.)	Denhillon	Carshalton	Wallington	Beddington (Foxley L.)	Beddington (Riverside)	Beddington (Sew. Fm.)	Croydon (Wm. N. rd.)	Croydon (Wob. rd.)	Croydon (Park H. R.)	Croydon (Pk. H. Ho.)
	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
1						.12	.12				.02	.01	.02					.10	.02	.01	.02	.02	.02		.05	
2						.04																				
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12							.13	.12	.13	.30	.15	.11	.13	.15	.12	.10	.11	.08	.11	.15	.09	.07	.08	.09	.08	
13	.25	.07	.07	.80		.14	.13			.02			.01				.07	.06								
14																										
15						.11	.08	.07	.07	.06	.07	.08	.09	.09		.08	.03	.06	.08	.09	.08	.05	.06	.08	.07	
16	.12	.17	.16	.17		.14	.08	.05	.06	.09	.03	.09	.07	.08			.07	.03	.07	.07	.06	.03	.06	.04	.06	
17		.19	.16	.16																						
18	.15																									
19																										
20																										
21																										
22																										
23																										
24	.49	.48	.39	.37		.47	.47	.59	.49	.64	.61	.55	.46	.46	.57	.56	.56	.44	.42	.48	.47	.48	.48	.51	.51	
25		.13	.20	.18		.10	.12	.16	.16	.22	.11	.12	.18	.10	.10	.37	.20	.12	.12	.11	.17	.16	.12	.18	.11	
26	.18	.33	.27	.22		.37	.25	.25	.29	.32	.33	.19	.22	.20	.25	.18	.26	.29	.21	.25	.18	.14	.16	.16	.15	
27	.07	.02	.08	.05		.03	.07	.01	.09	.11	.11	.02	.04	.03	.03	.03	.02	.02	.10	.01	.01	.01	.01	.01	.01	
28	.12	.14	.11	.09		.10	.03	.11				.07	.09	.08	.09	.08	.09	.03	.10	.08	.10	.05	.08	.09	.09	
29																										
30																										
31																										
*	1.51	1.52	1.44	1.32	1.47	1.62	1.29	1.25	1.29	1.76	1.52	1.24	1.32	1.19	1.16	1.40	1.34	1.04	1.13	1.25	1.17	1.01	1.07	1.12	1.13	1.22
†	9.58	9.79	8.47	7.09	10.33	10.19	8.59	9.31	9.08	10.59	10.01	8.03	8.87	8.93	7.96	7.74	8.41	7.19	8.32	8.62	8.15	6.88	8.26	7.90	7.96	8.63

MONTHLY GAUGE.

# Daily Rainfall.

The figures in this row give the totals for the month.

Greenwich average 90 years (1810-1904) for July is 4.00 inches.

The figures in this row give the totals for the month.

Day of Mo.	Croydon (Avondale rd.)	Addington (Hills)	Addington (Pump. St.)	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon (The Downs)	Wimbledon (T. Pold rd.)	Raynes Park	New Malden	Worcester Park	Esher	West Molesey	Surbiton	Kingston (Sew. Wks.)
1	IN. .03	IN. .04	IN. .03	IN. .10	IN. .	IN. .01	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .10	IN. .	IN. .03	IN. .01	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .01	IN. .10	IN. .50	IN. .06	IN. .03	IN. .
2	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
3	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
4	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
5	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
6	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
7	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
8	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
9	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
10	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
11	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
12	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
13	IN. .11	IN. .10	IN. .10	IN. .09	IN. .11	IN. .12	IN. .09	IN. .01	IN. .09	IN. .10	IN. .09	IN. .16	IN. .08	IN. .11	IN. .08	IN. .09	IN. .06	IN. .08	IN. .09	IN. .17	IN. .07	IN. .12	IN. .07	IN. .09	IN. .09	IN. .08
14	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
15	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
16	IN. .09	IN. .09	IN. .11	IN. .09	IN. .12	IN. .10	IN. .11	IN. .15	IN. .10	IN. .10	IN. .11	IN. .11	IN. .08	IN. .08	IN. .06	IN. .06	IN. .01	IN. .09	IN. .08	IN. .09	IN. .09	IN. .09	IN. .05	IN. .07	IN. .07	IN. .07
17	IN. .01	IN. .01	IN. .14	IN. .19	IN. .18	IN. .11	IN. .10	IN. .09	IN. .06	IN. .07	IN. .10	IN. .08	IN. .	IN. .03	IN. .05	IN. .10	IN. .13	IN. .14	IN. .17	IN. .12	IN. .07	IN. .09	IN. .14	IN. .09	IN. .14	IN. .02
18	IN. .06	IN. .10	IN. .14	IN. .19	IN. .18	IN. .11	IN. .10	IN. .09	IN. .06	IN. .07	IN. .10	IN. .08	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
19	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
20	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
21	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
22	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
23	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
24	IN. .48	IN. .54	IN. .47	IN. .44	IN. .42	IN. .38	IN. .40	IN. .40	IN. .43	IN. .40	IN. .39	IN. .50	IN. .56	IN. .58	IN. .49	IN. .48	IN. .56	IN. .64	IN. .64	IN. .59	IN. .67	IN. .64	IN. .56	IN. .59	IN. .70	IN. .68
25	IN. .11	IN. .13	IN. .08	IN. .05	IN. .09	IN. .50	IN. .13	IN. .25	IN. .17	IN. .12	IN. .12	IN. .24	IN. .16	IN. .23	IN. .18	IN. .20	IN. .14	IN. .12	IN. .32	IN. .12	IN. .13	IN. .19	IN. .07	IN. .07	IN. .09	IN. .14
26	IN. .20	IN. .21	IN. .26	IN. .26	IN. .28	IN. .24	IN. .21	IN. .10	IN. .13	IN. .13	IN. .25	IN. .15	IN. .12	IN. .15	IN. .23	IN. .14	IN. .31	IN. .36	IN. .38	IN. .31	IN. .40	IN. .33	IN. .35	IN. .40	IN. .43	IN. .43
27	IN. .02	IN. .03	IN. .08	IN. .06	IN. .10	IN. .19	IN. .06	IN. .09	IN. .12	IN. .03	IN. .04	IN. .10	IN. .07	IN. .03	IN. .01	IN. .10	IN. .16	IN. .12	IN. .17	IN. .12	IN. .04	IN. .18	IN. .02	IN. .06	IN. .06	IN. .08
28	IN. .08	IN. .09	IN. .09	IN. .09	IN. .10	IN. .19	IN. .07	IN. .08	IN. .08	IN. .08	IN. .09	IN. .10	IN. .07	IN. .04	IN. .07	IN. .09	IN. .09	IN. .10	IN. .10	IN. .10	IN. .06	IN. .06	IN. .05	IN. .07	IN. .07	IN. .11
29	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
30	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
31	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
*	IN. .18	IN. .34	IN. .36	IN. .28	IN. .30	IN. .65	IN. .17	IN. .17	IN. .18	IN. .03	IN. .19	IN. .35	IN. .07	IN. .28	IN. .18	IN. .26	IN. .46	IN. .65	IN. .75	IN. .48	IN. .55	IN. .64	IN. .31	IN. .51	IN. .164	IN. .177
†	IN. .08	IN. .91	IN. .89	IN. .53	IN. .95	IN. .39	IN. .86	IN. .53	IN. .02	IN. .46	IN. .05	IN. .92	IN. .54	IN. .37	IN. .82	IN. .45	IN. .68	IN. .74	IN. .77	IN. .82	IN. .61	IN. .82	IN. .63	IN. .88	IN. .707	IN. .756

\* The figures in this row give the totals for the month.

† The totals from January 1st.

# Daily Rainfall.

Greenwich average 90 years (1815-1904) for May is 1.95 in., and from 1st January 8.40 in.

May, 1909

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putney Heath	Wandsworth.	Streatlam	West Norwood	Upper Norwood	Forest Hill (Dartmouth rd.)	Forest Hill (Hon. O. rd.)	Forest Hill (Cemetery)	Wilmington	Dartford	Eltham	Nunhead	East Dulwich	Brockwell Park	Clapham Park	Battersea Park	Battersea (Waterw.)	Cambe'well (The Green)	Cambe'well (Leytongsq.)	Telegraph Hill	Greenwich	Deptford	Southwark Park
1	IN. .03	IN. .06	IN. .02	IN. .	IN. .02	IN. .03	IN. .05	IN. .02	IN. .	IN. .01	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .01	IN. .	IN. .06	IN. .03	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .01
2	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
3	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
4	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
5	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
6	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
7	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
8	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
9	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
10	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
11	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
12	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
13	IN. .09	IN. .09	IN. .14	IN. .11	IN. .09	IN. .10	IN. .10	IN. .09	IN. .12	IN. .12	IN. .03	IN. .01	IN. .02	IN. .09	IN. .10	IN. .10	IN. .13	IN. .13	IN. .17	IN. .10	IN. .10	IN. .06	IN. .08	IN. .08	IN. .04	IN. .07
14	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
15	IN. .07	IN. .05	IN. .06	IN. .09	IN. .07	IN. .07	IN. .09	IN. .09	IN. .09	IN. .08	IN. .05	IN. .13	IN. .15	IN. .09	IN. .08	IN. .08	IN. .09	IN. .08	IN. .08	IN. .05	IN. .06	IN. .08	IN. .07	IN. .07	IN. .08	IN. .06
16	IN. .	IN. .	IN. .03	IN. .02	IN. .05	IN. .10	IN. .17	IN. .09	IN. .16	IN. .16	IN. .13	IN. .20	IN. .13	IN. .05	IN. .06	IN. .	IN. .13	IN. .12	IN. .05	IN. .03	IN. .04	IN. .03	IN. .05	IN. .02	IN. .02	IN. .
17	IN. .10	IN. .06	IN. .03	IN. .11	IN. .05	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
18	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
19	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
20	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
21	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
22	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
23	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
24	IN. .62	IN. .70	IN. .67	IN. .64	IN. .48	IN. .49	IN. .54	IN. .56	IN. .53	IN. .49	IN. .13	IN. .45	IN. .46	IN. .49	IN. .28	IN. .	IN. .62	IN. .63	IN. .64	IN. .46	IN. .51	IN. .43	IN. .40	IN. .44	IN. .41	IN. .42
25	IN. .24	IN. .10	IN. .14	IN. .22	IN. .33	IN. .15	IN. .15	IN. .20	IN. .18	IN. .17	IN. .19	IN. .21	IN. .28	IN. .14	IN. .17	IN. .	IN. .14	IN. .29	IN. .12	IN. .11	IN. .15	IN. .12	IN. .15	IN. .16	IN. .16	IN. .25
26	IN. .42	IN. .32	IN. .31	IN. .40	IN. .32	IN. .18	IN. .17	IN. .12	IN. .14	IN. .14	IN. .02	IN. .07	IN. .08	IN. .10	IN. .16	IN. .	IN. .22	IN. .04	IN. .35	IN. .36	IN. .19	IN. .18	IN. .14	IN. .13	IN. .12	IN. .12
27	IN. .07	IN. .11	IN. .15	IN. .05	IN. .17	IN. .01	IN. .02	IN. .02	IN. .01	IN. .04	IN. .02	IN. .15	IN. .17	IN. .16	IN. .03	IN. .	IN. .09	IN. .09	IN. .10	IN. .11	IN. .02	IN. .07	IN. .06	IN. .10	IN. .10	IN. .07
28	IN. .07	IN. .08	IN. .11	IN. .09	IN. .09	IN. .08	IN. .09	IN. .08	IN. .10	IN. .09	IN. .02	IN. .06	IN. .07	IN. .07	IN. .07	IN. .	IN. .09	IN. .09	IN. .09	IN. .06	IN. .08	IN. .05	IN. .07	IN. .07	IN. .05	IN. .05
29	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
30	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
31	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .	IN. .
*	IN. 1.71	IN. 1.57	IN. 1.66	IN. 1.73	IN. 1.62	IN. 1.21	IN. 1.38	IN. 1.27	IN. 1.33	IN. 1.30	IN. .59	IN. 1.28	IN. 1.36	IN. 1.19	IN. .96	IN. .	IN. 1.43	IN. 1.38	IN. 1.66	IN. 1.31	IN. 1.15	IN. 1.02	IN. 1.02	IN. 1.17	IN. .98	IN. .95
†	IN. 7.69	IN. 7.51	IN. 7.66	IN. 7.38	IN. 8.05	IN. 6.82	IN. 8.02	IN. 8.18	IN. 8.15	IN. 7.36	IN. 5.19	IN. 6.98	IN. 8.11	IN. 7.19	IN. 6.32	IN. .	IN. 8.14	IN. 6.91	IN. 8.00	IN. 6.93	IN. 5.74	IN. 5.25	IN. .	IN. 7.35	IN. 6.38	IN. 5.09

\* m. = inches; † in. = inches. The totals for the month + The totals for May 1st.



## NOTES.

MAY, 1909.

THE month opened with snow showers on the 1st in many places throughout the district. Then, from the 2nd to the 12th, came a bright sunny period, with cold winds between the north and east, combined with rather low day and night temperatures. After this followed four very cold days, with snow showers in many places throughout the district on the 13th, 14th, and 15th. Then came a warm period till the 24th, with shade temperatures running up to 80° and above on the 21st, 22nd, and 23rd in many places. Then from the 25th to 28th the weather was showery, and this was followed by three warm sunny days. Solar haloes were observed on seven days at Epsom, six days at Greenwich and Purley, and one day at Benhilton and Wallington; and a lunar halo was seen at Epsom on the 24th. The somewhat rare phenomenon of a lunar rainbow was seen at Sanderstead at 10.30 p.m. on the 31st. Thunder was heard at Abinger on the 25th, and at Wallington on the 18th; and sheet lightning was observed at Epsom on the 24th and 28th, and at Wallington on the 12th and 28th. The following phenological notes may be welcome:—At Croydon, on the 8th, the following plants were in flower, *viz.* lilacs (pink and white), horse chestnut (white and red), laburnum, and mountain ash; at Epsom the cherry blossomed on the 8th, the apple and white lilac on the 9th, the horse chestnut and purple lilac on the 13th, the laburnum on the 20th, the pink may on the 23rd, and the white may on the 25th; and at Wallington the apple flowered on the 3rd, the white chestnut on the 11th, the red chestnut on the 15th, the laburnum on the 19th, the white may on the 20th, and the red and pink may on the 22nd, and a queen wasp was observed on the 20th. The observer at Wimbledon mentions that at the end of the month the ash was not in leaf, and was a month behind the oak. Caterpillars appear to be doing much damage to apples at Nutfield, and to apples and roses at West Wickham, and to oak-trees at Nutfield and at Croham Hurst. The elm-trees have a large crop of fruit round Croydon. The rainfall is about three-fifths of the average. The mean temperature varies from  $\frac{1}{4}^{\circ}$  to  $\frac{3}{4}^{\circ}$  below the average, and was at Croydon (Park Hill House) and Worcester Park 52°·8, at Wallington 52°·3, at Epsom 52°·2, and at Warlingham 51°·6; the maximum shade mean temperature being a little above the average, whilst the mean shade minimum temperature was very low, being at Wallington only lower in 1891 and 1902. At Croydon (Park Hill House) evaporation was 3·800 in., and was 1·1 in. in excess of the average, and there was no percolation. There were recorded at Wallington 288·9 hours of sunlight, which is 89·7 hours, or nineteen per cent., above the May average of the twenty years 1886–1905, and is the highest May value in the record.

F. CAMPBELL-BAYARD, F.R.Met.Soc., *Hon. Sec.*

WALLINGTON, SURREY, *June 18th, 1909.*

## NOTES.

JUNE, 1909.

THIS is the coldest and probably the most sunless June for at least thirty-three years. In the Wallington record the present month's values—amount of cloud, 9·1; number of rainy days, twenty; and relative humidity, eighty per cent.—are the highest June values; whilst the mean shade maximum  $60^{\circ}8$ , the mean shade minimum  $47^{\circ}7$ , the mean black bulb in vacuo  $102^{\circ}6$ , and the mean bright bulb in vacuo  $77^{\circ}2$ , and the total sunlight are the lowest June values. Mr. Clark, of Purley, remarks that the mean temperature of June 11th, 1909,  $45^{\circ}5$ , is one degree lower than the mean temperature of January 11th, 1909, *viz.*,  $46^{\circ}5$ . In several places in the district the exposed thermometer on the 11th was below the freezing point, falling at Epsom to  $28^{\circ}0$ . Owing to the cold sunless weather plant growth has been slow and backward, and the showery weather has been bad for the hay crop. The observer at Redhill says that “there is a very good show of small fruit, but the strawberry crop is nearly destroyed by damp and slugs”; and the observer at West Wickham says: “Our orchard crops on the fruit farms are entirely a failure. Scarcely a leaf on many of the trees, and some without any.” There was a thunderstorm at Greenwich on the 1st and 24th, and at Epsom and Wallington on the 1st, and thunder only at Epsom on the 1st, 17th, 24th, and 27th, at Beddington on the 1st, 24th, and 29th, at Benhilton on the 1st and 4th, at Abinger Hall and Sevenoaks on the 1st and 24th, at Kew on the 24th, 27th, and 29th, at Wallington on the 24th, and Greenwich on the 29th; and lightning only at Epsom on the 1st, 12th, 21st, 23rd, 27th, and 28th, at Croydon on the 1st, and Greenwich on the 21st. A rainbow was seen at Beddington on the 19th and 22nd, and at Croydon on the 22nd. Solar haloes were observed at Greenwich on the 5th, 8th, 18th, and 21st; and at Epsom on the 14th and 21st; and lunar haloes at Epsom on the 27th and 28th. The prevailing wind was northerly. The month has been an unhealthy one, and scarlet fever has been very prevalent in some parts of the district. The rainfall is between an inch and an inch and a quarter above the average. The mean temperature of the month is rather over  $5^{\circ}$  below the average, and was at Worcester Park  $54^{\circ}7$ , at Croydon (Park Hill House) and Wallington  $54^{\circ}3$ , at Epsom  $54^{\circ}2$ , and at Warlingham  $52^{\circ}6$ . At Croydon (Park Hill House) evaporation was 2·265 in., which is 0·85 in. below the average and considerably less than in May, and there was no percolation. There were recorded at Wallington 93·0 hours of sunlight, which is 109·2 hours, or twenty-two per cent., below the June average of the twenty years 1886–1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

*Hon. Sec.*

WALLINGTON, SURREY, 16th July, 1909.

Day of Mo.	Holmbury St. Mary	Abinger (Rectory)	Abinger (The Hall)	Dorking. (Denbies)	Betchworth	Buckland	Reigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westerham (Hill Est.)	Westerham (Town)	Merstham	Upper Gatton	Walton-on- the-Hill	Headley	Leather- head	D'Abernon	Chase	Ashtead	Chipsstead	Chaldon	Caterham (Asylum)
1	IN. 43	IN. 46	IN. 47	IN. 44	IN. 44	IN. 40	IN. 40	IN. 41	IN. 50	IN. 53	IN. 49	IN. 47	IN. 53	IN. 37	IN. 48	IN. 40	IN. 46	IN. 46	IN. 46	IN. 34	IN. 44	IN. 50	IN. 40	IN. 49	IN. 37	IN. 49	IN. 44
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
*	2-95	3-29	3-43	3-69	3-18	2-66	2-74	2-68	2-93	2-93	2-69	2-83	3-97	2-71	3-74	3-49	3-11	3-18	3-57	3-93	3-59	4-01	3-58	3-37	3-16	3-04	3-04
†	13-35	14-18	15-79	15-66	13-08	11-09	12-02	12-21	11-27	11-79	10-61	10-55	13-30	12-19	12-32	12-60	11-79	13-11	13-09	14-15	13-35	12-27	12-43	12-83	12-56	12-65	12-65

\* The figures in this row give the totals for the month.

† The totals from January 1st.



Daily Rainfall.

Greenwich average 90 years (1815-1904) for June is 1.96 in., and from 1st January 10.36 in.

June, 1909.

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putey Heath	Wandsworth	Streatham	West Norwood	Upper Norwood	Forest Hill (Dartm'd.)	Forest Hill (Hon.O'rd.)	Forest Hill (Cemetery)	Willesden	Dartford	Bilham	Nunhead	East Dulwich	Brookwell Park	Clapham Park	Battersea Park	Battersea (Waterwk.)	Cambe'well (TheGreen)	Cambe'well (Leytongsq.)	Telegraph Hill	Greenwich	Deptford	Southwark
1	IN. 45	IN. 42	IN. 43	IN. 45	IN. 32	IN. 35	IN. 38	IN. 35	IN. 34	IN. 35	IN. 24	IN. 31	IN. 40	IN. 42	IN. 35	IN. 43	IN. 43	IN. 43	IN. 40	IN. 29	IN. 38	IN. 35	IN. 30	IN. 36	IN. 33	IN. 40
2	IN. 08	IN. 04	IN. 02	IN. 07	IN. 05	IN. 13	IN. 10	IN. 09	IN. 13	IN. 08	IN. 07	IN. 07	IN. 08	IN. 07	IN. 07	IN. 12	IN. 12	IN. 12	IN. 02	IN. 02	IN. 06	IN. 06	IN. 01	IN. 09	IN. 07	IN. 03
3	IN. 04	IN. 20	IN. 22	IN. 26	IN. 17	IN. 09	IN. 28	IN. 33	IN. 32	IN. 29	IN. 25	IN. 33	IN. 27	IN. 47	IN. 38	IN. 33	IN. 46	IN. 34	IN. 34	IN. 17	IN. 34	IN. 15	IN. 28	IN. 37	IN. 33	IN. 03
4	IN. 46	IN. 36	IN. 30	IN. 30	IN. 27	IN. 40	IN. 18	IN. 16	IN. 13	IN. 17	IN. 18	IN. 07	IN. 17	IN. 12	IN. 11	IN. 22	IN. 02	IN. 02	IN. 17	IN. 12	IN. 11	IN. 28	IN. 12	IN. 13	IN. 14	IN. 06
5	IN. 09	IN. 14	IN. 14	IN. 15	IN. 17	IN. 15	IN. 16	IN. 18	IN. 14	IN. 14	IN. 13	IN. 13	IN. 13	IN. 04	IN. 12	IN. 15	IN. 15	IN. 14	IN. 14	IN. 05	IN. 14	IN. 09	IN. 10	IN. 09	IN. 08	IN. 02
6	IN. 04	IN. 09	IN. 04	IN. 04	IN. 02	IN. 02	IN. 03	IN. 02	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 07	IN. 01	IN. 06	IN. 06	IN. 06	IN. 06	IN. 02	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01
7	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
8	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
9	IN. 10	IN. 06	IN. 06	IN. 06	IN. 05	IN. 08	IN. 09	IN. 09	IN. 10	IN. 09	IN. 09	IN. 10	IN. 15	IN. 11	IN. 07	IN. 06	IN. 06	IN. 09	IN. 08	IN. 02	IN. 05	IN. 05	IN. 06	IN. 07	IN. 04	IN. 03
10	IN. 07	IN. 04	IN. 05	IN. 03	IN. 04	IN. 09	IN. 13	IN. 17	IN. 10	IN. 15	IN. 02	IN. 01	IN. 02	IN. 03	IN. 16	IN. 11	IN. 33	IN. 05	IN. 05	IN. 01	IN. 15	IN. 14	IN. 13	IN. 10	IN. 10	IN. 12
11	IN. 54	IN. 19	IN. 16	IN. 50	IN. 51	IN. 82	IN. 79	IN. 62	IN. 57	IN. 60	IN. 33	IN. 74	IN. 95	IN. 60	IN. 75	IN. 10	IN. 65	IN. 54	IN. 54	IN. 48	IN. 81	IN. 66	IN. 62	IN. 53	IN. 52	IN. 56
12	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
13	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
14	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
15	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
16	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
17	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
18	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
19	IN. 00	IN. 01	IN. 04	IN. 00	IN. 02	IN. 00	IN. 00	IN. 02	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 01	IN. 00	IN. 00	IN. 00	IN. 04	IN. 19	IN. 03	IN. 05	IN. 00	IN. 04	IN. 01	IN. 00
20	IN. 17	IN. 20	IN. 21	IN. 05	IN. 01	IN. 05	IN. 08	IN. 04	IN. 02	IN. 03	IN. 02	IN. 01	IN. 02	IN. 11	IN. 04	IN. 02	IN. 07	IN. 09	IN. 04	IN. 06	IN. 06	IN. 01	IN. 02	IN. 01	IN. 00	IN. 00
21	IN. 04	IN. 07	IN. 04	IN. 03	IN. 03	IN. 18	IN. 09	IN. 06	IN. 03	IN. 01	IN. 04	IN. 09	IN. 11	IN. 03	IN. 04	IN. 02	IN. 31	IN. 28	IN. 28	IN. 20	IN. 24	IN. 21	IN. 25	IN. 47	IN. 29	IN. 17
22	IN. 29	IN. 36	IN. 44	IN. 29	IN. 26	IN. 18	IN. 22	IN. 22	IN. 20	IN. 22	IN. 34	IN. 19	IN. 22	IN. 16	IN. 22	IN. 31	IN. 35	IN. 25	IN. 16	IN. 37	IN. 32	IN. 23	IN. 44	IN. 61	IN. 50	IN. 38
23	IN. 27	IN. 68	IN. 56	IN. 31	IN. 23	IN. 37	IN. 46	IN. 41	IN. 42	IN. 39	IN. 34	IN. 19	IN. 22	IN. 94	IN. 39	IN. 25	IN. 35	IN. 25	IN. 14	IN. 37	IN. 22	IN. 26	IN. 23	IN. 21	IN. 23	IN. 28
24	IN. 32	IN. 19	IN. 20	IN. 21	IN. 22	IN. 25	IN. 23	IN. 28	IN. 30	IN. 26	IN. 25	IN. 18	IN. 20	IN. 23	IN. 21	IN. 25	IN. 25	IN. 20	IN. 14	IN. 14	IN. 22	IN. 26	IN. 50	IN. 48	IN. 51	IN. 66
25	IN. 76	IN. 50	IN. 43	IN. 82	IN. 64	IN. 61	IN. 64	IN. 42	IN. 32	IN. 38	IN. 40	IN. 06	IN. 08	IN. 09	IN. 43	IN. 60	IN. 60	IN. 60	IN. 54	IN. 77	IN. 58	IN. 70	IN. 50	IN. 48	IN. 51	IN. 66
26	IN. 28	IN. 12	IN. 17	IN. 10	IN. 09	IN. 02	IN. 02	IN. 03	IN. 01	IN. 01	IN. 01	IN. 05	IN. 05	IN. 00	IN. 03	IN. 01	IN. 01	IN. 02	IN. 04	IN. 00	IN. 01	IN. 03	IN. 00	IN. 01	IN. 02	IN. 02
27	IN. 04	IN. 01	IN. 01	IN. 18	IN. 13	IN. 15	IN. 24	IN. 18	IN. 19	IN. 23	IN. 14	IN. 06	IN. 10	IN. 11	IN. 05	IN. 03	IN. 03	IN. 01	IN. 01	IN. 00	IN. 00	IN. 00	IN. 00	IN. 01	IN. 00	IN. 00
28	IN. 08	IN. 17	IN. 23	IN. 18	IN. 18	IN. 18	IN. 18	IN. 10	IN. 14	IN. 09	IN. 03	IN. 03	IN. 05	IN. 07	IN. 04	IN. 01	IN. 01	IN. 01	IN. 14	IN. 00	IN. 00	IN. 00	IN. 04	IN. 07	IN. 05	IN. 03
29	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00	IN. 00
30	IN. 412	IN. 385	IN. 382	IN. 385	IN. 326	IN. 394	IN. 433	IN. 379	IN. 350	IN. 350	IN. 276	IN. 263	IN. 323	IN. 358	IN. 346	IN. 421	IN. 363	IN. 316	IN. 292	IN. 354	IN. 334	IN. 315	IN. 367	IN. 320	IN. 312	IN. 312
+	IN. 81	IN. 36	IN. 48	IN. 23	IN. 31	IN. 76	IN. 1235	IN. 1197	IN. 65	IN. 86	IN. 95	IN. 961	IN. 1134	IN. 1077	IN. 978	IN. 1235	IN. 1054	IN. 1116	IN. 985	IN. 928	IN. 859	IN. 859	IN. 1102	IN. 958	IN. 821	IN. 821

\* The figures in this row give the totals for the month.

† The totals from January 1st.

Day of Mo.	Holmbury St. Mary	Abinger (Rectory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Reigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westernham (Hill Est.)	Westernham (Town)	Mersham	Upper Gallon	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)
1	..	..	..	..	..	..	..	..	..	..	..	..01	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..	..	..	..44	..	..	..	..	IN.	..36	..	..	..	..	..	..	..	..
3	..36	..	..40	..34	..36	..56	..48	..45	..51	..51	..49	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
4	..	..02	..	..	..05	..	..	..	..06	..06	..	..04	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
5	..07	..06	..07	..08	..	..06	..05	..15	..06	..06	..02	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
6	..50	..65	..63	..62	..57	..78	..82	..82	..80	..72	..67	..98	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
7	..02	..11	..06	..15	..20	..29	..36	..25	..28	..27	..32	..25	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..01	..	..02	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
9	..21	..09	..19	..19	..17	..15	..14	..15	..14	..15	..12	..14	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
10	..10	..13	..07	..02	..19	..06	..06	..05	..07	..05	..04	..06	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
11	..12	..18	..20	..14	..09	..08	..23	..25	..21	..20	..16	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
13	..12	..	..01	..02	..	..01	..01	..02	..07	..05	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
14	..04	..03	..01	..03	..02	..02	..02	..02	..02	..02	..01	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
15	..16	..12	..17	..15	..16	..15	..16	..24	..18	..18	..16	..15	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
16	..10	..08	..11	..09	..16	..17	..20	..15	..22	..21	..18	..17	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
21	..	..	..	..	..	..01	..01	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..01	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
24	..29	..43	..39	..63	..38	..26	..36	..37	..29	..26	..14	..24	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
25	..06	..11	..13	..11	..09	..08	..05	..08	..10	..10	..06	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
26	..05	..	..	..03	..01	..06	..02	..04	..05	..06	..04	..01	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
27	1.02	1.05	1.08	1.10	..95	..84	..90	..94	..85	..82	..68	..60	..	..	..	..	IN.	..	1.03	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..05	..07	..08	..08	..04	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
29	..05	..04	..06	..05	..06	..03	..05	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
30	..05	..05	..06	..09	..08	..04	..05	..10	..11	..11	..04	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
31	..	..	..	..	..	..	..	..	..01	..	..	..09	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
*	3.32	3.51	3.64	3.84	3.54	3.67	3.97	4.17	4.05	3.85	3.17	3.31	4.06	3.29	3.38	3.68		4.19	3.40	3.64	2.73	2.76	3.19	3.77	3.57	3.70
†	16.67	17.69	19.43	19.50	16.62	14.76	15.99	16.38	15.32	15.64	13.78	13.86	17.36	15.48	15.70	16.28		17.30	16.49	17.79	16.08	15.03	15.62	16.60	16.13	16.35

\* The figures in this row give the totals for the month.

† The totals from January 1st.

# **Daily Rainfall.**

*Greenwich average 90 years (1815-1904) for July is 2.45 in., and from 1st January 12.81 in.*

**July, 1909.**

Day of Mo.	Gattham (Reservoir)	Chevening Park	Knoekholt (field gau.)	Knoekholt (tower ga.)	Chelsham	Wallingham	Carshalton	Benhillton	Sutton (Sew. Wks.)	Purley (Pump, St.)	Purley (Ridgl. rd.)	Sanderst. (Beech, rd.)	Burgh Heath	Epson	Danstead (The Hall)	Danstead (Basing H.)	Kenley (Hazelea)	Warlingham	Wallingham	Beddington (Foxley L.)	Beddington (Riverside)	Beddington (Sew. Fm.)	Croydon (Wn. N. rd.)	Croydon (Wob. rd.)	Croydon (Park H. R.)	Croydon (Pk. H. Ho.)
IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	39	44	30	28	..	..	..	..	28	21	20	22	17	25	19	19	18	30	..	24	25	23	20	22	22	27
4	14	15	10	06	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	14	15	10	06	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	95	91	90	90	..	..	..	..	48	59	76	71	148	80	108	108	77	115	..	61	75	74	72	66	66	76
7	15	50	28	25	..	..	..	..	06	07	07	06	27	31	14	..	08	10	..	10	09	05	04	05	05	08
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	18	16	12	12	..	..	..	..	13	15	17	16	16	16	16	16	17	16	..	14	16	11	12	15	14	15
10	02	06	..	..	..	..	..	..	03	19	08	01	09	13	09	09	03	06	..	02	06	02	07	11	09	10
11	21	06	10	08	..	..	..	..	05	19	18	16	31	29	19	19	21	17	..	29	26	17	15	12	07	14
12	01	01	..	..	..	..	..	..	03	16	14	14	16	16	12	12	11	13	..	..	..	01	..	..	..	..
13	12	01	..	..	..	..	..	..	04	..	..	..	03	04	02	02	03	03	..	..	..	01	01	03	01	01
14	02	01	02	02	..	..	..	..	01	04	02	02	02	04	02	02	02	02	..	03	04	02	01	01	01	02
15	19	24	15	13	..	..	..	..	26	21	17	18	24	19	20	17	21	23	..	24	20	23	24	24	24	27
16	21	21	21	19	..	..	..	..	06	10	16	14	16	16	12	16	10	06	..	09	14	10	07	11	12	10
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	01	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	..	..	04	04	..	..	..	..	03	05	01	01	06	02	04	04	01	02	..	10	06	08	05	06	06	12
24	37	21	30	28	..	..	..	..	14	16	20	20	10	07	11	11	23	23	..	12	16	11	13	26	13	13
25	12	06	02	02	..	..	..	..	..	10	14	03	07	05	07	07	04	08	..	05	04	04	03	04	02	04
26	..	05	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	96	88	90	85	..	..	..	..	95	88	96	92	92	86	92	92	103	103	..	90	103	83	84	92	85	90
28	..	..	..	..	..	..	..	..	..	06	05	..	08	08	04	04	01	08	..	06	07	01	01	..	..	06
29	09	..	11	09	..	..	..	..	..	07	05	..	07	08	04	04	08	08	..	02	03	04	04	04	04	04
30	12	13	04	04	..	..	..	..	13	15	19	09	19	16	22	22	11	12	..	07	06	14	13	11	10	14
31	..	..	..	..	..	..	..	..	01	06	03	02	07	02	02	02	02	01	..	02	02	01	01	02	01	02
*	426	405	359	335	344	371	356	430	269	371	345	309	430	369	371	356	326	403	289	303	303	293	289	318	282	334
+	17-23	17-64	15-79	14-15	17-40	16-73	16-29	18-54	14-45	15-40	15-24	13-88	18-54	17-70	16-29	16-29	14-50	17-65	14-14	14-87	14-30	12-86	14-14	14-27	13-71	15-22

\* The totals from January 1st.

\* The totals from January 1st.



# Daily Rainfall.

Greenwich average 90 years (1815-1904) for July is 2.45 in., and from 1st January 1878 to 1st July, 1909, 1.27 in.

July, 1909.

Day of Mo.	Croydon (Avondale rd.)	Addington Hills	Addington (Pump St.)	West Wickham	Hayes	Ikeston	Orrington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon The Downs	Wimbledon (T. Cold rd.)	Haynes Park	New Malden	Worcester Park	Fisher	West Molesey	Surbiton	Kingston (Sew. Wks.)
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*	3.19	3.45	3.05	3.76	3.39	3.30	3.16	3.38	3.11	3.17	3.05	5.22	3.29	3.55	3.20	3.35	3.30	3.65	3.76	3.26	3.24	3.19	2.73	3.33	3.45	4.18
†	14.93	15.57	15.31	17.28	15.86	16.57	14.49	13.71	13.48	13.71	14.20	19.03	14.16	15.60	14.78	14.79	13.48	15.44	15.22	13.73	14.10	14.89	12.62	14.02	14.24	15.94

\* The figures in this row give the totals for the month.

† The totals from January 1st.

# Daily Rainfall.

Greenwich average 90 years (1815-1904) for July is 2.45 in., and from 1st January 12.81 in.

July, 1909.

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putney Heath	Wandsworth	Streatham	West Norwood	Upper Norwood	Forest Hill (Dartmouth)	Forest Hill (Hon. Ord.)	Forest Hill (Cemetary)	Wilmington	Dartford	Eltham	Nunhead	East Dulwich	Brockwell Park	Clapham Park	Battersea Park	Battersea (Valerwerk.)	Cambe'well (The Green)	Cambe'well (Leylonsq.)	Telegraph Hill	Greenwich	Deptford	Southwark
1	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*	3.61	2.73	2.84	3.24	3.40	3.06	3.36	3.53	3.25	3.22	2.33	3.80	4.25	3.55	3.15		3.79	3.26	3.32	2.94	3.21	2.11	2.81	3.16	3.02	2.58
†	15.42	14.09	14.32	14.47	14.71	13.82	15.71	15.50	14.90	14.08	10.28	13.41	15.59	14.32	12.93		16.14	13.80	14.48	12.79	12.49	10.70		14.18	12.60	10.79

\* The figures in this row give the totals for the month.

† The totals from January 1st.

## NOTES.

JULY, 1909.

A COLD, wet, and sunless July, and extremely windy; in fact, the most windy July in the Wallington record. The month has been an unhealthy one, and there has been a great deal of illness about. The cold wet weather has been prejudicial to many fruit and garden crops. Plums seem to be a failure, and apples and pears also in some parts. Outdoor tomatoes appear to be a failure at West Wickham. An extremely good crop of all kinds of nut fruits. Aphis are very numerous about Croydon. The lime blossomed on the 7th. Honey is scarce, owing to unfavourable conditions. About Abinger much of the hay was discoloured and spoilt. Thunderstorms occurred at Greenwich on the 7th, 13th, and 26th; at Upper Gatton and Epsom on the 10th; at Benhilton on the 10th and 13th; at Wallington on the 13th; and at Beddington on the 7th, 10th, and 13th. Lightning alone and thunder alone also occurred on these and other days in many parts of the district. Rainbows were seen at Epsom on the 13th and 24th, and at Beddington on the 26th. In no part of the district did the shade maximum rise higher than 78°. At Wallington the mean shade maximum—68°·1—is 3°·8 below the average. The rainfall is between half and three-quarters of an inch above the average, and at Wallington the number of rainy days has only been exceeded in July three times. The mean temperature of the month is between two and two and a half degrees below the average, and was at Croydon (Park Hill House) 60°·7, at Wallington and Worcester Park 60°·4, at Epsom 60°·2, and at Warlingham 58°·8. At Croydon (Park Hill House) evaporation was 3·080 in., which is 0·225 in. below the average, and there was no percolation. Solar haloes were seen at Greenwich on the 5th, 6th, 9th, 13th, 14th, 15th, 20th, and 26th—that on the 26th having parhelion—and at Epsom on the 3rd, 5th, 6th, 9th, 20th, and 27th. There were recorded at Wallington 164·9 hours of sunlight, which is 50·7 hours, or eleven per cent. below the July average of the twenty years 1886–1905, and in the record there have only been three Julys with a smaller amount.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

*Hon. Sec.*

WALLINGTON, SURREY, 23rd August, 1909.



## NOTES.

AUGUST, 1909.

THE first three days were cool and cloudy, then from the 4th to the 15th it was warm and dry, and then from the 16th to the 25th cool, cloudy, and rainy, and after that till the end of the month rather cold. The month, as a whole, has been a healthy one. There was an absolute drought from the 3rd to the 15th in most districts. The observer at Abinger Hall mentions "a plague of wasps," but in other parts few of these insects have been seen—in Wallington they have been noticed on the 19th and 25th only. On the 25th there were violent thunderstorms; at Abinger Hall no less than five distinct ones were observed, of which three were overhead with very vivid lightning and hail in icy pieces. On this day, at Betchworth, .44 in. of rain fell in eleven minutes, and at Wickham Court, West Wickham, an inch fell in thirty minutes between 1 and 1.30 p.m., and at Keston trees were struck by lightning, and at Epsom the hailstones were of the size of small stone marbles. Early morning fogs occurred on the 8th, 9th, 10th, and 11th. Sheet lightning was seen at Wallington on the 7th; at Epsom on the 8th, 18th, and 25th; and at Greenwich on the 8th, 21st, and 23rd. Solar haloes were seen at Greenwich on the 3rd, 16th, 17th, 25th, and 30th; and at Epsom on the 3rd, 17th, and 30th; and a lunar one was seen at both these places on the 28th. Butterflies have been scarce; at Wallington the small blue was seen on the 14th, the large tortoiseshell on the 21st, and the red admiral on the 23rd. Many meteors were seen on the 12th, including a very fine one. The rainfall varies from a quarter to nearly an inch below the average. The mean temperature of the month is about  $0^{\circ}5$  above the average, and was at Croydon (Park Hill House)  $62^{\circ}6$ , at Epsom, Wallington, and Worcester Park  $62^{\circ}1$ , and at Warlingham  $60^{\circ}9$ . At Croydon (Park Hill House) evaporation amounted to 3.04 in., which is 0.36 in. above the average, and there was no percolation. There were recorded at Wallington 210.1 hours of sunlight, which is twelve hours, or 2 per cent., above the August average of the twenty years 1886-1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

*Hon. Sec.*

WALLINGTON, SURREY, *September 20th, 1909.*

Day of Mo.	Holmbury St. Mary	Abinger (Hectory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Reigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westerham (Hill Est.)	Westerham <sup>3</sup> (Town)	Mersham	Upper Gatton	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)	
1	IN. .07	IN. .08	IN. .09	IN. .18	IN. .15	IN. .12	IN. .09	IN. .07	IN. .09	IN. .10	IN. .07	IN. .07	IN. .10	IN. .10	IN. .07	IN. .05	IN.	IN. .07	IN. .07	IN. .09	IN. .15	IN. .14	IN. .14	IN. .14	IN. .09	IN. .06	IN. .05
2	..	..01	..	..	..01	..01	..02	..03	..03	..02	..01	..	..02	..	..	..04	..	..04	..	..01	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	..04	..03	..02	..03	..02	..01	..05	..02	..01	..02	..	..	..02	..02	..	..	..	..04	..04	..03	..	..01	..03	..03	..02	..	..
17	..50	..56	..61	..64	..57	..59	..55	..59	..65	..22	..62	..57	..60	..63	..61	..52	..	..59	..57	..57	..62	..59	..47	..50	..64	..	..
18	..06	..05	..03	..19	..13	..26	..05	..28	..25	..23	..17	..16	..12	..19	..11	..23	..	..18	..05	..08	..10	..12	..20	..19	..29	..	..
19	..	..54	..47	..49	..03	..04	..48	..47	..48	..47	..03	..01	..04	..04	..54	..46	..	..58	..50	..45	..35	..38	..26	..45	..55	..	..
20	..62	..	..	..49	..48	..45	..48	..47	..48	..47	..42	..40	..67	..56	..54	..46	..	..58	..50	..45	..02	..26	..26	..45	..55	..	..
21	..02	..01	..	..03	..01	..01	..16	..25	..25	..24	..19	..18	..30	..19	..20	..07	..	..30	..07	..04	..02	..	..	..02	..55	..	..
22	..33	..31	..32	..23	..29	..21	..16	..25	..25	..24	..19	..18	..30	..19	..20	..22	..	..30	..07	..04	..02	..	..	..02	..55	..	..
23	..65	..62	..63	..59	..55	..58	..52	..55	..58	..57	..60	..53	..64	..64	..53	..60	..	..54	..52	..41	..19	..30	..13	..25	..26	..	..
24	..50	..95	..93	..83	..65	..67	..42	..47	..48	..47	..31	..35	..04	..15	..03	..03	..	..34	..76	..52	..38	..21	..63	..20	..51	..	..
25	..	..	..01	..02	..	..01	..	..	..	..02	..	..	..	..	..	..	..	..	..01	..	..	..	..	..	..21	..16	..
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	..	..	..01	..02	..01	..01	..01	..	..01	..	..	..01	..04	..	..01	..01	..	..	..	..	..	..03	..	..	..01	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*	2.79	3.16	3.15	3.28	2.90	2.97	2.36	2.78	2.85	2.41	2.42	2.26	2.59	2.58	2.15	2.26		2.72	2.84	2.85	2.32	2.04	2.39	2.40	2.58	2.47	..
†	19.46	20.85	22.58	22.78	19.52	17.73	18.35	19.16	18.17	16.05	16.20	16.12	19.95	18.06	17.85	18.54		20.02	19.33	20.64	18.40	17.07	18.01	19.00	18.71	18.82	..

\* The figures in this row give the totals for the month.

† The totals from January 1st.





Day of Mo.	Croydon (Avondale rd.)	Addington Hills	Addington (Pump St.)	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon The Downs	Wimbledon (L. Pold rd.)	Raynes Park	New Malden	Worcester Park	Fisher	West Molesey	Surbiton	Kingston (Sew. Wks.)	
1	16·02	16·02	16·03	15·15	15·25	16·16	27·02	27·02	21·02	18·18	19·01	15·04	15·04	17·02	08·06	15·01	10·10	13·10	11·11	10·10	07·07	10·10	08·08	16·09	07·07	11·11	
2																											
3																											
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7																											
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9																											
10																											
11																											
12																											
13																											
14																											
15																											
16	04·04	03·03	01·01	01·01			01·01	01·01		01·01	02·02	04·04	04·04	04·04	06·06	01·01	01·01	01·01	02·02	01·01	01·01	03·03		02·02	01·01	03·03	
17	53·13	54·14	59·09	68·08	70·00	64·04	56·06	54·04	54·04	53·03	58·08	53·03	43·03	47·07	50·00	41·01	39·03	43·03	41·01	44·04	43·03	03·03	44·04	32·02	37·07	40·00	
18	10·02	28·08	09·09	10·10	08·08		08·08	13·03	11·01	08·08	09·09	12·02	09·09	03·03		05·05	10·10	09·09	07·07	03·03	03·03	01·01	18·08	15·05	09·09	03·03	
19	02·02	02·02	01·01							02·02		02·02	03·03	03·03	42·02	33·03	61·01	02·02	02·02	33·03	29·02	35·03	02·02	24·02	31·01	30·00	
20	43·03	39·03	41·01	41·01	35·03	30·03	31·01	31·01	30·03	38·08	35·03	43·03	36·03	34·04			27·02	35·03	30·03	33·03	02·02	08·08		24·02	31·01	30·00	
21						05·05									03·03	10·10		01·01			02·02			01·01	05·05	03·03	
22	10·02	05·05	08·08	02·02		07·07	01·01	22·02	05·05	05·05	07·07	05·05	04·04	07·07	06·06	44·04	07·07	09·09	08·08	10·10	07·07	16·08	08·08	08·08	05·05	11·11	
23	13·03	11·01	12·02	10·10		10·10	10·10	05·05	05·05	05·05	07·07	05·05	04·04	07·07	51·01	17·02	41·01	45·05	45·05	43·03	41·01	47·07	41·01	39·03	41·01	45·05	
24	52·02	55·05	56·06	62·02	65·05	60·00	55·05	70·00	55·05	59·09	56·06	57·07	47·07	53·03		15·05	09·09	12·02	11·01	09·09	18·08	26·02	23·02	40·00	41·01	18·08	
25	05·05	09·09	04·04	1·01	10·10	30·03	04·04	10·10	05·05	06·06	04·04	14·02	11·01	17·02	11·01		09·09	12·02							01·01		
26																											
27																											
28																											
29	03·03	02·02	04·04	03·03		10·10	04·04	02·02	04·04	04·04	07·07	06·06	05·05	06·06	04·04	03·03			04·04	03·03	03·03		04·04	06·06	03·03	06·06	
30																											
31	01·01	01·01	02·02																								
*	2·14	2·27	2·14	3·22	2·03	2·41	1·85	2·37	1·85	1·94	1·97	2·08	1·78	2·05	1·87	1·89	2·08	1·69	1·61	1·56	1·53	2·05	1·69	1·99	1·60	1·72	
+ 17·07	17·84	17·45	20·50	17·89	18·98	16·34	16·08	15·33	15·65	16·17	21·11	15·94	17·65	16·65	16·68	15·56	17·13	16·83	15·29	15·63	16·94	14·31	16·01	15·84	17·66	17·66	

\* The figures in this row give the totals for the month.

† The totals from January 1st.

# Daily Rainfall.

Greenwich average 90 years (1815-1904) for August is 2.32 in., and from 1st January 15.13 in.

August, 1909.

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putey Heath	Wandsworth.	Streatham	West Norwood	Upper Norwood	Forest Hill (Dartm. rd.)	Forest Hill (Hon. O. rd.)	Forest Hill (Cemetery)	Wilmington	Dartford	Eltham	Nunhead	East Dulwich	Brookwell Park	Clapham Park	Battersea Park	Battersea (Valewark.)	Cambe'well (The Green)	Cambe'well (Leytonsq.)	Telegraph Hill	Greenwich	Deptford	Southwark
1	.19	.20	.18	.21	.23	.15	.15	.14	.18	.18	.01	.22	.18	.21	.16		.21	.18	.28	.26	.24	.34	.20	.24	.21	.30
2	..	..	..	..	..	..	.01	..	.01	.01	..	.01	.02	..	.01		..	..	.02	.01	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
16	.02	.03	.02	.03	.01	.02	.03	.02	.02	.02	..	.01	..	..	.01		.02	.03	..	.01	..	..	.03	.03	.01	..
17	.40	.38	.38	.41	.37	.40	.49	.46	.43	.37	.08	.43	.47	.53	.37		.55	.44	.45	.35	.40	.18	.28	.41	.37	.38
18	.06	.04	.07	.13	.05	.05	.14	.09	.09	.08	..	.09	.03	.14	.07		.10	.05	.08	.01	.06	.02	.07	.05	.02	.06
19	.02	.02	.02	.02	.28	.31	.01	.45	.39	.34	.17	.31	.32	.45	.29		.01	.04	.03	.25	.30	.18	.30	.33	.30	.23
20	.32	.20	.01	.01	..	..	..	..	..	..	..	..	..	..	..		.37	.30	.26	..	..	..	..	..	..	..
21	.01	.01	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
22	.03	.01	..	..	..	..	..	..	..	..	..	..	.03	..	..		..	..	..	..	..	..	..	..	..	..
23	.10	.05	.06	.08	.08	.13	.16	.08	.16	.13	.12	.05	.03	.05	.09		.10	.09	.08	.05	.11	.05	.08	.10	.07	.03
24	.45	.34	.33	.40	.52	.43	.49	.47	.51	.45	.28	.60	.60	.47	.40		.52	.44	.37	.37	.38	.40	.40	.41	.39	.37
25	.20	.07	.05	.02	.05	.12	.19	.13	.06	.03	.01	.04	.18	.29	.04		.02	.02	.04	.02	.06	.06	.05	.19	.05	.10
26	..	..	..	..	.01	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
29	.05	.07	.09	.05	.03	.02	.04	..	.04	.03	..	.01	.03	.03	.01		.03	.05	.05	.03	..	..	..	.02	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
31	..	..	..	..	..	..	.01	.15	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
*	1.82	1.45	1.41	1.60	1.63	1.63	2.09	1.99	1.87	1.64	.67	1.78	1.89	2.17	1.45		1.93	1.64	1.66	1.36	1.55	1.23	1.41	1.80	1.42	1.47
+	17.24	15.34	15.73	16.07	16.34	15.45	17.80	17.49	16.77	15.72	10.95	15.19	17.48	16.49	14.38		18.07	15.44	16.14	14.15	14.04	11.93	..	15.98	14.02	12.26

\* The figures in this row give the totals for the month.

† The totals from January 1st.

Day of Mo.	Holmbury St. Mary	Abinger (Theory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Reigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westernham (Hill Est.)	Westernham (Town)	Mersham	Upper Gatton	Walton-on- the-Hill	Hedley	Leather- head	D'Aberron Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)
1	IN. 15	IN. 18	IN. 20	IN. 09	IN. 08	IN. 02	IN. 09	IN. 08	IN. 10	IN. 09	IN. 03	IN. 03	IN. 27	IN. 10	IN. 25	IN. 25	IN.	IN. 13	IN. 10	IN. 11	IN. 06	IN. 11	IN. 08	IN. 19	IN. 17	IN. 17
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	14	12	12	12	09	06	05	05	05	04	05	05	27	07	08	10	06	06	04	09	04	04	05	08	08	08
5	06	07	09	10	07	05	05	07	08	02	05	02	04	11	05	08	06	11	05	02	02	04	07	09	10	09
6	16	03	04	06	04	02	01	02	03	09	02	02	07	06	07	03	06	06	05	04	01	08	02	06	06	06
7	16	18	26	11	13	11	07	07	09	09	11	11	26	15	19	20	07	07	05	24	10	08	04	06	08	08
8	12	10	17	15	13	18	20	22	10	09	05	06	06	12	08	08	06	24	13	24	22	17	19	23	22	18
9	19	16	18	10	07	09	06	08	07	07	05	02	05	06	05	06	07	07	15	21	09	10	09	06	06	06
10	15	17	22	19	13	15	15	13	14	14	10	17	19	10	18	11	01	18	15	21	17	12	16	15	13	14
11	..	..	..	03	..	..	01	..	..	..	..	01	..	15	14	10	17	01	16	29	13	11	10	19	19	19
12	10	10	13	10	16	09	12	13	13	11	09	05	16	15	14	10	17	17	16	53	42	17	27	36	46	48
13	16	21	30	32	36	18	31	29	32	30	20	14	61	40	54	38	39	39	41	24	19	11	19	14	10	11
14	..	..	..	..	..	..	..	..	..	..	..	01	..	11	06	05	..	12	11	24	19	..	..	..	..	..
15	16	14	17	16	12	12	12	10	11	09	06	10	08	..	..	..	..	17	09	04	02	06	07	..	..	..
16	06	07	07	..	02	03	03	02	03	03	02	02	02	..	01	01	..	08	50	65	118	52	67	..	..	..
17	02	11	17	38	40	03	46	15	27	23	25	01	..	..	..	..	..	..	50	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	01	01	..	..	..	..	..	..	..	..	..	..	..	02	01	03	02	01	01	01	..	..
21	..	..	..	..	..	01	07	33	25	30	22	19	30	64	31	50	..	16	06	02	01	01	..	20	27	50
22	..	..	..	..	02	01	41	13	31	26	24	29	25	..	24	12	..	35	31	38	49	23	52	39	26	10
23	14	17	13	31	49	43	09	10	18	17	19	03	14	13	15	14	..	06	06	..	02	04	03	03	02	01
24	13	09	10	05	04	15	09	10	18	19	09	11	41	76	31	38	..	18	14	26	05	34	15	03	13	26
25	02	..	02	02	01	01	01	01	02	01	..	01	..	02	09	..	..	04	02	..	01	..	..	03	01	..
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..	..	..	02	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	01	01	..	..
28	72	61	63	59	63	56	60	63	55	56	49	46	53	56	52	50	..	59	60	58	57	62	57	53	57	51
29	22	21	25	22	34	32	38	29	37	37	33	35	37	17	33	46	..	38	28	28	26	25	22	40	27	31
30	05	03	03	08	03	03	03	03	02	02	..	01	02	04	01	..	..	03	03	..	09	06	07	02	02	03
*	283	275	328	331	352	267	346	306	343	329	256	229	412	379	366	355	..	67	338	411	419	315	350	344	320	335
+	22 29	23 60	25 86	26 09	23 04	20 40	21 81	22 22	21 60	21 34	18 76	18 41	24 07	21 85	21 51	22 09	23 69	22 71	24 75	22 59	20 22	20 22	21 51	22 44	21 91	22 17

\* The figures in this row give the totals for the month.

† The totals from January 1st.



**Daily Rainfall.** *Greenwich average 90 years (1815-1904) for September is 2.24 in., and from 1st January 17.37 in. September, 1909.*

[illegible]

\* The figures in this row give the totals for the month.

+ The totals from January 1st.

**Daily Rainfall.** *Greenwich average 90 years (1815-1904) for September is 2.24 in., and from 1st January 17.37 in.* **September, 1909.**

Day of Mo.	Croydon (Avoird.)	Addington Hills	Addington (Pump, St.)	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon The Downs	Wimbledon (T. fold rd.)	Raynes Park	New Malden	Worcester Park	Fisher	West Molesey	Surbiton	Kingston (Sew. Wks.)
1	1.13	1.13	1.13	1.10	1.19	1.17	1.13	1.11	1.87	1.10	1.09	1.08	1.07	1.09	1.08	1.07	1.07	1.17	1.09	1.10	1.10	1.19	1.13	1.10	1.24	1.14
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	0.07	0.22	0.06	0.21	0.10	0.20	0.20	0.10	0.10	0.11	0.11	0.10	0.10	0.14	0.11	0.11	0.12	0.12	0.14	0.10	0.08	0.27	0.19	0.12	0.14	0.13
5	0.05	0.04	0.04	0.04	..	0.04	0.04	0.02	0.05	0.05	0.14	0.05	0.04	0.05	0.03	0.04	0.04	0.04	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.02
6	0.06	0.10	0.12	0.25	0.08	0.16	0.07	0.03	0.08	0.09	0.12	0.14	0.15	0.08	0.02	0.11	0.05	..	0.08	0.01	..	0.02	0.04	..	0.03	0.01
7	0.26	0.23	0.19	0.28	0.34	0.16	0.17	0.18	0.21	0.23	0.25	0.35	0.21	0.22	0.12	0.14	0.17	0.17	0.15	0.15	0.10	0.12	0.11	0.24	0.11	0.12
8	0.09	0.08	0.10	0.06	0.07	0.03	0.05	0.01	0.02	0.04	0.04	0.04	0.04	0.06	0.07	0.06	0.05	0.08	0.06	0.07	0.18	0.07	0.08	0.06	0.07	0.07
9	0.14	0.14	0.10	0.14	0.16	0.17	0.13	0.15	0.18	0.18	0.14	0.17	0.15	0.16	0.14	0.15	0.14	0.14	0.13	0.13	0.18	0.14	0.14	0.14	0.15	0.13
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	0.01	0.23	0.20	0.24	0.25	0.17	0.19	0.21	0.21	0.22	0.18	0.23	0.27	0.28	0.19	0.17	0.15	0.02	0.17	0.16	0.06	0.12	0.09	0.10	0.11	0.15
12	0.24	0.23	0.34	0.39	0.30	0.53	0.58	0.29	0.27	0.28	0.20	0.31	0.32	0.34	0.25	0.11	0.08	0.11	0.08	0.10	0.16	0.12	0.12	0.12	0.13	0.10
13	0.35	0.28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	0.12	0.14	0.20	0.18	0.15	0.25	0.22	0.21	0.15	0.11	0.10	0.12	0.10	0.11	0.10	0.08	0.07	0.11	0.09	0.09	0.10	0.13	0.09	0.09	0.10	0.10
16	0.03	0.02	0.01	0.05	0.10	0.07	0.04	0.12	0.05	0.07	0.07	0.10	0.05	0.03	0.01	0.02	..	0.01	0.01	..	..	..	0.35	0.02	0.01	0.01
17	..	..	..	..	..	..	..	..	..	0.05	0.08	0.03	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	0.02	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	0.16	0.22	0.20	0.32	..	0.64	0.54	0.18	0.51	0.36	0.47	0.28	0.18	0.16	0.21	0.19	0.12	0.19	0.21	0.15	0.10	0.14	0.02	0.01	0.10	0.24
22	0.19	0.07	0.12	0.14	0.57	0.22	0.06	0.08	0.03	0.07	0.09	0.06	0.06	0.13	0.06	0.06	0.06	0.10	0.05	0.13	0.11	0.16	0.23	0.24	0.16	0.15
23	0.06	0.04	0.02	0.01	0.04	0.02	0.02	0.01	0.02	0.02	0.04	0.05	0.01	0.03	0.05	0.03	0.05	0.05	0.06	0.03	..	0.05	0.03	0.05	0.03	0.05
24	0.31	0.27	0.41	0.36	0.23	0.28	0.37	0.25	0.32	0.27	0.42	0.18	0.11	0.14	0.15	0.06	0.02	0.03	0.04	0.03	0.07	0.28	0.18	0.07	0.20	0.03
25	0.02	0.04	0.02	0.03	0.02	0.02	..	..	0.01	0.02	..	0.07	0.12	0.08	0.02	0.09	0.01	0.03	0.03	0.02	..	0.01	..	..	0.01	0.01
26	..	..	..	..	0.05	..	..	..	..	..	..	..	..	0.01	0.01	0.01	..	..	0.03	..	..	..	0.02	..	0.01	0.03
27	0.46	0.45	0.46	0.50	0.23	0.46	0.40	0.35	0.37	0.39	0.43	0.43	0.43	0.46	0.53	0.47	0.46	0.52	0.50	0.51	0.51	0.52	0.47	0.44	0.48	0.52
28	0.38	0.27	0.26	0.48	0.40	0.31	0.33	0.23	0.39	0.35	0.34	0.53	0.43	0.42	0.27	0.09	0.28	0.20	0.24	0.17	0.17	0.23	0.23	0.24	0.21	0.24
29	0.01	0.01	0.01	..	..	0.01	..	..	..	..	..	..	..	..	0.08	0.28	0.04	0.09	0.06	0.08	0.05	0.11	0.06	0.07	0.05	0.06
30	0.15	0.01	0.01	0.01	..	..	..	..	..	..	..	..	..	..	..	0.28	0.04	0.09	0.06	0.08	0.05	0.11	0.06	0.07	0.05	0.06
*	3.15	3.01	3.00	3.82	3.33	4.12	3.79	2.45	3.91	2.97	3.31	3.35	2.84	2.95	2.56	2.35	1.98	2.35	2.25	2.05	1.81	2.68	2.06	2.31	2.41	2.35
+	20.22	20.85	20.45	24.32	21.22	23.10	20.13	18.53	19.24	18.62	19.48	24.46	18.78	20.60	19.21	19.03	17.54	19.48	19.08	17.34	17.44	19.62	16.97	18.32	18.25	20.01

\* The figures in this row give the totals for the month.

+ The totals from January 1st.

**Daily Rainfall.** *Greenwich average 90 years (1815-1904) for September is 2.24 in., and from 1st January 17.37 in. September, 1909.*

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putney Heath	Wandsworth	Streatham	West Norwood	Upper Norwood	Forest Hill (Dartmouth Rd.)	Forest Hill (Hon. Ord.)	Forest Hill (Cemetery)	Wilmington	Dartford	Eltham	Nunhead	RECORD CEASED.				Brookwell Park	Clapham Park	Battersea Park	Battersea (Waterw.)	Cambe'well (The Green)	Cambe'well (Leytongsq.)	Telegraph Hill	Greenwich	Deptford	Southwark
1	IN. .20	IN. .05	IN. .08	IN. .06	IN. .03	IN. .07	IN. .08	IN. .12	IN. .09	IN. .12	IN. .01	IN. .10	IN. .12	IN. .07	IN. .09	IN. .09	IN. .13	IN. .12	IN. .06	IN. .08	IN. .06	IN. .05	IN. .09	IN. .13	IN. .12	IN. .06	IN. .11	IN. .11	
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
4	IN. .10	IN. .15	IN. .22	IN. .14	IN. .16	IN. .09	IN. .16	IN. .15	IN. .15	IN. .19	IN. .03	IN. .11	IN. .16	IN. .20	IN. .16	IN. .13	IN. .20	IN. .18	IN. .23	IN. .21	IN. .23	IN. .20	IN. .14	IN. .18	IN. .13	IN. .24	IN. .18	IN. .16	
5	IN. .02	IN. .02	IN. .02	IN. .03	IN. .03	IN. .03	IN. .04	IN. .05	IN. .05	IN. .04	IN. .02	IN. .03	IN. .03	IN. .03	IN. .03	IN. .03	IN. .03	IN. .02	IN. .03	IN. .03	IN. .03	IN. .04	IN. .04	IN. .02	IN. .02	IN. .03	IN. .02	IN. .01	
6	..	..	IN. .01	IN. .01	IN. .02	..	..	..	..	..	..	IN. .01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
7	IN. .03	IN. .08	IN. .07	IN. .05	IN. .10	IN. .04	IN. .16	IN. .14	IN. .08	IN. .06	..	..	..	IN. .02	IN. .03	IN. .03	IN. .13	IN. .10	IN. .14	IN. .16	IN. .05	IN. .04	IN. .04	IN. .09	IN. .10	IN. .14	IN. .10	IN. .06	
8	IN. .12	IN. .18	IN. .21	IN. .12	IN. .17	IN. .13	IN. .15	IN. .15	IN. .15	IN. .13	IN. .05	IN. .12	IN. .17	IN. .27	IN. .13	IN. .13	IN. .20	IN. .16	IN. .15	IN. .15	IN. .16	IN. .13	IN. .04	IN. .09	IN. .10	IN. .14	IN. .10	IN. .06	
9	IN. .04	IN. .08	IN. .07	IN. .06	IN. .04	IN. .02	IN. .04	IN. .21	IN. .04	IN. .04	IN. .01	IN. .01	IN. .02	IN. .02	IN. .02	IN. .03	IN. .04	IN. .05	IN. .05	IN. .04	IN. .05	IN. .11	IN. .03	IN. .03	IN. .02	IN. .01	IN. .01	IN. .01	
10	IN. .12	IN. .13	IN. .18	IN. .15	IN. .13	IN. .17	IN. .16	IN. .20	IN. .15	IN. .14	IN. .14	IN. .16	IN. .15	IN. .14	IN. .12	IN. .12	IN. .15	IN. .15	IN. .13	IN. .13	IN. .15	IN. .11	IN. .14	IN. .10	IN. .10	IN. .10	IN. .10	IN. .08	
11	IN. .03	IN. .15	IN. .02	IN. .02	IN. .03	IN. .01	..	IN. .28	IN. .02	IN. .01	IN. .22	IN. .21	IN. .25	IN. .27	IN. .23	IN. .23	IN. .17	IN. .17	IN. .17	IN. .28	IN. .28	IN. .17	IN. .20	IN. .17	IN. .18	IN. .26	IN. .24	IN. .24	
12	IN. .05	IN. .15	IN. .14	IN. .15	IN. .07	IN. .13	IN. .23	IN. .33	IN. .29	IN. .24	IN. .17	IN. .29	IN. .03	IN. .20	IN. .11	IN. .11	IN. .06	IN. .06	IN. .06	IN. .02	IN. .02	IN. .06	IN. .08	IN. .08	IN. .06	IN. .14	IN. .11	IN. .06	
13	IN. .17	IN. .08	..	..	IN. .02	IN. .21	IN. .20	IN. .33	IN. .29	IN. .24	IN. .17	IN. .29	IN. .03	IN. .20	IN. .11	IN. .11	IN. .04	IN. .04	IN. .04	IN. .02	IN. .02	IN. .06	IN. .20	IN. .17	IN. .18	IN. .26	IN. .24	IN. .24	
14	..	..	..	..	..	IN. .07	IN. .03	IN. .06	IN. .11	IN. .13	IN. .02	IN. .17	IN. .23	IN. .14	IN. .13	IN. .13	IN. .07	IN. .07	IN. .13	IN. .13	IN. .09	IN. .09	IN. .09	IN. .10	IN. .11	IN. .10	IN. .10	IN. .12	
15	IN. .07	IN. .14	..	..	IN. .10	IN. .07	IN. .09	IN. .12	IN. .11	IN. .13	IN. .06	IN. .17	IN. .23	IN. .14	IN. .13	IN. .07	IN. .04	IN. .04	IN. .13	IN. .13	IN. .09	IN. .03	IN. .06	IN. .04	IN. .05	IN. .07	IN. .05	IN. .06	
16	IN. .03	..	..	..	..	IN. .02	IN. .03	IN. .06	IN. .08	IN. .10	IN. .06	IN. .17	IN. .23	IN. .14	IN. .13	IN. .07	IN. .04	IN. .04	IN. .13	IN. .13	IN. .09	IN. .03	IN. .06	IN. .04	IN. .05	IN. .07	IN. .05	IN. .06	
17	..	..	..	..	..	IN. .01	..	..	IN. .06	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
18	..	..	..	..	..	..	..	..	IN. .01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
22	IN. .09	IN. .33	IN. .13	IN. .21	IN. .15	IN. .13	IN. .13	IN. .15	IN. .29	IN. .27	IN. .25	IN. .10	IN. .42	IN. .37	IN. .23	IN. .23	IN. .22	IN. .22	IN. .22	IN. .17	IN. .22	IN. .12	IN. .13	IN. .20	IN. .15	IN. .21	IN. .17	IN. .16	
23	IN. .13	IN. .07	IN. .07	IN. .10	IN. .06	IN. .12	IN. .04	IN. .04	IN. .05	IN. .05	IN. .01	IN. .26	IN. .02	IN. .07	IN. .03	IN. .03	IN. .05	IN. .05	IN. .05	IN. .05	IN. .05	IN. .12	IN. .12	IN. .20	IN. .06	IN. .07	IN. .17	IN. .03	
24	IN. .04	IN. .05	IN. .07	IN. .05	IN. .04	IN. .02	IN. .03	IN. .03	IN. .08	IN. .02	IN. .02	IN. .01	IN. .02	IN. .01	IN. .03	IN. .03	IN. .03	IN. .03	IN. .03	IN. .03	IN. .03	IN. .04	IN. .02	IN. .02	IN. .02	IN. .02	IN. .02	IN. .02	
25	IN. .05	IN. .11	IN. .12	IN. .24	IN. .12	IN. .13	IN. .09	IN. .17	IN. .15	IN. .15	..	IN. .08	IN. .07	IN. .09	IN. .12	IN. .12	IN. .14	IN. .16	IN. .18	IN. .23	IN. .23	IN. .09	IN. .16	IN. .10	IN. .26	IN. .26	IN. .12	IN. .06	
26	IN. .01	IN. .01	IN. .02	IN. .02	IN. .03	IN. .01	IN. .02	IN. .05	IN. .15	IN. .19	..	..	IN. .02	IN. .01	IN. .03	IN. .03	IN. .02	IN. .02	IN. .02	IN. .02	IN. .02	IN. .01	IN. .06	..	IN. .03	IN. .16	IN. .06	IN. .05	
27	..	IN. .01	IN. .02	IN. .03	..	..	..	..	..	..	..	..	..	..	IN. .01	IN. .01	IN. .01	IN. .11	IN. .08	IN. .01	IN. .08	IN. .01	IN. .06	..	IN. .03	IN. .16	IN. .06	IN. .05	
28	IN. .53	IN. .46	IN. .43	IN. .44	IN. .56	IN. .45	IN. .48	IN. .48	IN. .48	IN. .43	IN. .13	IN. .34	IN. .41	IN. .33	IN. .40	IN. .40	IN. .52	IN. .39	IN. .40	IN. .41	IN. .44	IN. .44	IN. .38	IN. .40	IN. .38	IN. .37	IN. .30	IN. .05	
29	IN. .15	IN. .29	IN. .33	IN. .33	IN. .26	IN. .35	IN. .34	IN. .36	IN. .36	IN. .36	IN. .26	IN. .30	IN. .28	IN. .21	IN. .20	IN. .20	IN. .37	IN. .29	IN. .23	IN. .26	IN. .26	IN. .16	IN. .11	IN. .18	IN. .18	IN. .17	IN. .11	IN. .11	
30	IN. .05	IN. .07	IN. .04	IN. .03	IN. .03	IN. .15	IN. .06	IN. .03	IN. .01	IN. .02	IN. .01	..	..	..	IN. .02	IN. .02	IN. .05	IN. .08	IN. .06	IN. .06	IN. .03	IN. .02	IN. .02	IN. .01	IN. .02	IN. .18	IN. .17	IN. .04	
*	IN. .03	IN. .38	IN. .46	IN. .25	IN. .31	IN. .36	IN. .53	IN. .25	IN. .36	IN. .88	IN. .41	IN. .66	IN. .55	IN. .51	IN. .20	IN. .58	IN. .81	IN. .47	IN. .43	IN. .10	IN. .83	IN. .82	IN. .83	IN. .48	IN. .91	IN. .65	IN. .91	IN. .65	
†	IN. .27	IN. .72	IN. .19	IN. .32	IN. .65	IN. .81	IN. .33	IN. .44	IN. .83	IN. .60	IN. .36	IN. .66	IN. .03	IN. .90	IN. .58	IN. .81	IN. .81	IN. .91	IN. .57	IN. .25	IN. .87	IN. .75	IN. .75	IN. .46	IN. .93	IN. .91	IN. .65	IN. .91	

\* The figures in this row give the totals for the month.

† The totals from January 1st.



## NOTES.

SEPTEMBER, 1909.

THE month has been very wet, cold, and sunless. In the Wallington Record of Rainfall commencing in 1881 there has been only one wetter September, *viz.* 1896; and with respect to the other Wallington meteorological observations, which commence in 1886, there have been only two colder Septembers, *viz.*, 1887 and 1894, and two more sunless ones, *viz.* 1894 and 1896. The month has been an unhealthy one, scarlet fever and diphtheria being more than usually prevalent. The wet, damp weather has greatly damaged the corn crops round Abinger, and almost ruined them around West Wickham; and potatoes are much diseased, and fruit is poor in quality and does not keep. In very few places in the district did the sheltered thermometer touch 70°. Wasps, bluebottles, and house flies were very numerous about West Wickham, where the swallows were still flying about at the end of the month, though at Purley they had departed on the 25th. Severe thunderstorms occurred in the Dorking district on the 17th with hailstones of large size at Betchworth, and at Epsom with vivid blue lightning and small cubes of transparent ice. Lightning was seen generally throughout the district during a thunderstorm on the 22nd and morning of the 23rd. Lightning was also seen at Outwood on the 10th. The observer at Redhill remarks on the unusual character of the rain on the 25th, *viz.* "sudden gushes of very heavy falls with as sudden cessation, very thundery but no thunder." Mist or fog occurred on the 2nd, 12th, 17th, 19th, 23rd, and 30th in parts of the district. With reference to the rate of the fall of rain at Epsom on the 17th  $\cdot 14$  in. fell in two minutes, being at the rate of  $4\cdot 20$  in. per hour, and on the 25th  $\cdot 24$  in. fell in three minutes, the rate per hour being  $4\cdot 80$  in. The rainfall of the month is from about 25 to 50 per cent. above the average. Solar haloes were observed at Greenwich on the 6th and 27th, and at Epsom on the 6th and 21st; and lunar ones were seen at Greenwich on the 26th, and at Epsom on the 27th and 30th. The mean temperature of the month is about  $2^{\circ}\cdot 5$  below the average, and was at Croydon (Park Hill House)  $55^{\circ}\cdot 2$ , at Worcester Park  $55^{\circ}\cdot 1$ , at Wallington  $55^{\circ}\cdot 0$ , at Epsom  $54^{\circ}\cdot 5$ , and at Warlingham  $53^{\circ}\cdot 7$ . At Croydon (Park Hill House) percolation through the chalk gauge was  $\cdot 714$  in., and was much above the average, and evaporation was  $1\cdot 27$  in., which was under the average. There were recorded at Wallington  $101\cdot 9$  hours of sunlight, which was  $57\cdot 8$  hours, or twelve per cent. below the September average of the twenty years 1886-1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

*Hon. Sec.*

WALLINGTON, SURREY, *October 16th, 1909.*

## NOTES.

OCTOBER, 1909.

THE month throughout has been very wet, especially during the last week. The first three weeks were very warm, both during the day and the night, the high minimum temperatures being a marked feature. The last week was cold, and there was a very sharp frost on the night of the 29th-30th, which practically destroyed all outdoor plants. As showing the mildness of the first three weeks, it may be mentioned that at Eversley, Haling Park Road, Croydon, "two ripe strawberries were gathered on the 20th, and a small bowlful of blossom with some green berries attached." There is a general complaint that all fruit seems to keep badly. Rainbows were observed at Croydon on the 5th at 5 p.m., at Wallington on the 5th, at Beddington on the 5th and 18th, at Abinger at 6 a.m. on the 18th, at Nutfield on the 21st, and a fine double one at Epsom on the 24th. A brilliant meteor was observed at Abinger at 9.30 a.m. in bright sunshine on the 5th in the north-west. Lightning was seen at Abinger on the 17th, and sheet lightning at Epsom on the 24th. Hail fell at Benhilton on the 13th, and at Nutfield on the 21st. A bright display of the Aurora was seen at Epsom on the 18th between 8.15 and 8.30 p.m., when streamers of rose-red and green were visible. The month has been unhealthy, scarlet fever being rather prevalent. Solar haloes were observed at Greenwich on the 5th, 7th, 8th, 13th, 22nd, and 24th; at Epsom on the 7th, 9th, and 13th; and at Purley on the 7th. The rainfall of the month is about fifty per cent. above the average. The mean temperature of the month is about  $3^{\circ}$  above the average, and was at Wallington  $52^{\circ}9$ , at Croydon (Park Hill House) and Worcester Park  $52^{\circ}8$ , at Epsom  $52^{\circ}4$ , and at Warlingham  $51^{\circ}0$ . At Wallington the wind force was 3.5, and is the highest October value in the record. At Croydon (Park Hill House) percolation through the chalk gauge was 2.976 in., or three times the average, and evaporation 1.145 in., or forty per cent. above the average. There were recorded at Wallington 84.8 hours of sunlight, which is 13 hours, or five per cent., below the October average of the twenty years 1886-1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

*Hon. Sec.*

WALLINGTON, SURREY, *November 20th, 1909.*

Day of Mo.	Holmbury St. Mary	Abinger (Rectory)	Abinger (The Hall)	Dorking (Denbies)	Betchworth	Buckland	Reigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westwigham (Hill Est.)	Westwigham (Town)	Merstham	Upper Gatton	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)
1	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	14	06	10	06	05	03	04	06	02	04	01	01	01	03	01	01	01	04	06	02	03	02	02	05	05	05
4	27	22	19	13	17	13	06	13	10	11	08	11	20	10	15	15	15	19	17	17	19	09	10	14	14	15
5	14	11	06	11	05	15	05	15	15	14	12	13	16	16	16	12	12	08	07	08	03	11	02	08	12	14
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	72	69	71	65	58	43	32	46	37	50	40	43	63	49	57	75	48	48	75	62	49	85	44	51	49	50
8	06	10	08	..	04	02	02	01	..	01	01	04	02	04	01	02	..	..	01	..	03	02	01	01	..	..
9	40	06	32	03	02	01	..	19	16	12	11	13	17	09	16	18	23	23	25	26	20	14	14	18	19	22
10	17	16	19	15	13	12	13	11	15	15	11	11	10	08	08	10	15	15	12	12	14	14	13	12	11	14
11	05	08	05	05	03	01	01	03	01	01	..	..	02	11	02	09	20	16	21	22	27	28	22	13	11	10
12	22	18	25	27	21	16	14	12	14	15	18	16	11	23	09	20	..	04	02	03	03	..	01	03	02	02
13	06	03	05	03	03	03	03	02	01	02	01	01	03	01	02	02	..	04	02	03	15	11	14	25	39	41
14	50	37	33	31	29	36	21	35	32	33	27	29	50	46	40	46	..	52	23	23	23	24	30	51	59	60
15	58	52	60	49	53	45	37	43	40	47	48	53	90	66	56	66	..	11	62	42	35	24	30	51	59	60
16	11	10	17	16	10	12	06	09	08	10	10	11	..	24	12	14	RECORD CEASED.	11	10	09	14	06	10	13	11	13
17	..	01	..	..	01	..	..	..	01	01	..	..	..	03	03	01	09	..	..	..	01	..	..	01	..	..
18	..	..	..	..	01	01	..	..	..	..	..	..	..	01	01	09	..	..	..	..	..	..	..	..	..	..
19	33	29	32	30	29	36	26	36	34	36	32	33	48	41	39	44	..	34	30	26	23	21	19	29	37	40
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	03	03	03	06	04	01	02	03	03	02	..	01	03	01	01	..	..	03	04	02	03	01	01	03	03	02
22	07	03	02	04	04	04	02	05	04	04	03	04	14	10	08	10	..	05	04	26	14	12	12	24	21	19
23	17	13	16	19	30	26	15	24	23	20	15	14	16	16	10	12	..	20	25	26	14	12	12	24	21	19
24	..	01	..	03	04	01	04	05	06	05	03	01	..	05	01	..	..	08	02	09	11	05	02	02	02	02
25	11	14	16	13	08	06	07	08	07	07	06	06	06	06	..	07	..	08	08	09	09	05	02	02	02	02
26	76	100	113	78	64	62	58	62	70	70	70	64	108	114	103	103	..	62	..	79	76	49	65	59	69	73
27	59	24	23	23	24	20	25	28	26	25	29	31	48	42	48	32	..	11	19	33	34	29	32	39	47	50
28	116	130	148	102	129	110	125	132	120	121	101	70	129	142	138	150	..	111	119	112	112	95	116	113	128	124
29	..	02	01	05	02	02	06	01	03	01	02	03	05	02	03	02	..	02	..	02	..	..	..	01	02	03
30	..	..	..	..	..	01	..	10	08	01	05	06	19	20	16	15	..	13	05	19	17	14	18	..	07	14
31	22	18	23	17	17	09	11	..	01	01	05	06	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*	6.99	6.23	7.08	5.96	5.70	5.14	4.54	5.47	5.15	5.34	4.71	4.51	7.01	6.21	6.24	6.75	28.80	5.11	5.22	5.62	5.11	4.49	4.43	5.23	5.74	5.93
†	29.28	29.83	32.94	32.05	28.74	25.54	26.35	27.69	26.75	26.68	23.47	22.92	31.08	28.06	27.75	28.84	28.80	27.93	30.37	27.70	24.71	25.94	27.67	27.65	28.10	28.10

\* The figures in this row give the totals for the month.

† The totals from January 1st.



# Daily Rainfall.

Greenwich average 90 years (1815-1904) for October is 2.71 in., and from 1st January 20.08 in.

October, 1909

Day of Mo.	Caterham (Reservoir)	Chelsham	Warling- ham	Kenley (Hazelea)	Banstead (The Hall)	Banstead H.	Burgh Heath	Epsum	Sandersd. (Beech rd.)	Purley (Ridld. rd.)	Purley (Pump. St.)	Sutton (Waterw.)	Sutton (Sew. Wks.)	Benhilton	Carshalton	Wallington	Beddington (Foxley L.)	Beddington (Riverside)	Beddington (Sew. Fm.)	Croydon (Vn. N. rd.)	Croydon (Wob. rd.)	Croydon (Park H. R.)	Croydon (Pk. H. Ho.)
1	IN. 02	IN.	IN.	IN. 01	IN. 03	IN. 03	IN. 02	IN. 06	IN. 03	IN. 01	IN. 04	IN. 03	IN. 03	IN. 05	IN. 04	IN. 04	IN. 01	IN. 07	IN. 03	IN. 04	IN. 03	IN. 03	IN. 03
2	2 03	..	..	.. 05	.. 06	.. 06	.. 02	.. 10	.. 03	.. 02	.. 04	.. 03	.. 03	.. 05	.. 04	.. 04	.. 04	.. 03	.. 04	.. 04	.. 04	.. 03	.. 03
3	3 18	..	..	.. 15	.. 09	.. 16	.. 12	.. 10	.. 10	.. 12	.. 09	.. 09	.. 06	.. 07	.. 08	.. 07	.. 08	.. 07	.. 10	.. 07	.. 04	.. 01	.. 03
4	4 13	..	..	.. 13	.. 13	.. 16	.. 19	.. 09	.. 12	.. 14	.. 15	.. 09	.. 08	.. 07	.. 08	.. 17	.. 20	.. 17	.. 14	.. 15	.. 14	.. 13	.. 15
5	5 22	..	..	.. 12	.. 02	.. 08	.. 08	.. 04	.. 10	.. 06	.. 05	.. 13	.. 15	.. 08	.. 08	.. 19	.. 10	.. 14	.. 19	.. 14	.. 09	.. 15	.. 20
6	6 ..	..	..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
7	7 49	..	..	.. 35	.. 55	.. 55	.. 71	.. 53	.. 40	.. 44	.. 43	.. 46	.. 55	.. 57	.. 53	.. 48	.. 57	.. 50	.. 35	.. 44	.. 41	.. 34	.. 39
8	8 ..	..	..	.. 04	.. 04	.. 04	.. ..	.. 05	.. 03	.. 02	.. ..	.. 03	.. ..	.. 01	.. 02	.. 02	.. 03	.. 02	.. 01	.. 01	.. ..	.. ..	.. ..
9	9 ..	..	..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
10	10 21	..	..	.. 09	.. 19	.. 17	.. 21	.. 16	.. 09	.. 11	.. 14	.. 10	.. 13	.. 13	.. 09	.. 11	.. 16	.. 10	.. 05	.. 08	.. 08	.. 08	.. 10
11	11 17	..	..	.. 10	.. 10	.. 10	.. 11	.. 13	.. 09	.. 11	.. 10	.. 09	.. 14	.. 12	.. 09	.. 08	.. 13	.. 08	.. 07	.. 09	.. 07	.. 07	.. 08
12	12 ..	..	..	.. 01	.. 03	.. 03	.. 03	.. 04	.. ..	.. 01	.. ..	.. ..	.. 03	.. 01	.. 01	.. 01	.. 12	.. 12	.. 10	.. 02	.. 10	.. 08	.. 10
13	13 15	..	..	.. 10	.. 09	.. 18	.. 21	.. 25	.. 10	.. 11	.. 10	.. 19	.. 15	.. 19	.. 19	.. 15	.. 12	.. 12	.. 10	.. 09	.. 10	.. 08	.. 10
14	14 03	..	..	.. 03	.. 01	.. 17	.. 02	.. 02	.. 13	.. 17	.. 18	.. 12	.. 10	.. 12	.. 09	.. 15	.. 18	.. 13	.. 08	.. 14	.. 12	.. 10	.. 16
15	15 43	..	..	.. 37	.. 04	.. 13	.. 19	.. 13	.. 13	.. 17	.. 37	.. 18	.. 16	.. 23	.. 19	.. 21	.. 48	.. 25	.. 16	.. 22	.. 27	.. 29	.. 16
16	16 65	..	..	.. 63	.. 27	.. 37	.. 45	.. 27	.. 39	.. 46	.. 37	.. 36	.. 18	.. 23	.. 19	.. 21	.. 48	.. 25	.. 16	.. 22	.. 27	.. 29	.. 16
17	17 14	..	..	.. 14	.. 11	.. 13	.. 11	.. 10	.. 12	.. 12	.. 10	.. 04	.. 04	.. 04	.. 04	.. 07	.. 06	.. 07	.. 01	.. 05	.. 06	.. 06	.. 08
18	18 ..	..	..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
19	19 02	..	..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
20	20 45	..	..	.. 38	.. 22	.. 21	.. 24	.. 22	.. 23	.. 26	.. 23	.. 19	.. 20	.. 21	.. 18	.. 19	.. 26	.. 19	.. 11	.. 16	.. 17	.. 18	.. 21
21	21 03	..	..	.. 03	.. 02	.. 02	.. ..	.. 02	.. 03	.. 01	.. ..	.. ..	.. ..	.. 01	.. 03	.. 01	.. 02	.. 01	.. ..	.. 01	.. 01	.. 01	.. 02
22	22 08	..	..	.. 08	.. 03	.. 03	.. 04	.. 03	.. 02	.. 03	.. 08	.. 01	.. 01	.. 01	.. 03	.. 01	.. 05	.. 01	.. ..	.. 01	.. 01	.. 01	.. 02
23	23 21	..	..	.. 22	.. 18	.. 17	.. 24	.. 12	.. 18	.. 19	.. 17	.. 11	.. 10	.. 09	.. 06	.. 17	.. 15	.. 24	.. 16	.. 18	.. 14	.. 16	.. 16
24	24 ..	..	..	.. 01	.. 01	.. 06	.. ..	.. 02	.. 02	.. 01	.. 02	.. 03	.. ..	.. 02	.. 02	.. 03	.. 10	.. 01	.. 01	.. 01	.. ..	.. ..	.. 01
25	25 07	..	..	.. 06	.. 04	.. 07	.. 08	.. 06	.. 03	.. 03	.. 05	.. 04	.. 07	.. 05	.. 03	.. 04	.. 06	.. 03	.. 02	.. 03	.. 03	.. 03	.. 04
26	26 72	..	..	.. 80	.. 66	.. 62	.. 68	.. 74	.. 67	.. 68	.. 65	.. 60	.. 59	.. 63	.. 58	.. 60	.. 60	.. 62	.. 62	.. 76	.. 69	.. 67	.. 71
27	27 51	..	..	.. 54	.. 40	.. 40	.. 39	.. 40	.. 51	.. 53	.. 52	.. 36	.. 37	.. 36	.. 37	.. 41	.. 50	.. 39	.. 36	.. 45	.. 39	.. 37	.. 41
28	28 42	..	..	.. 11	.. 05	.. 05	.. 09	.. 12	.. 08	.. 10	.. 05	.. 04	.. 10	.. 10	.. 08	.. 10	.. 06	.. 04	.. 04	.. 06	.. 03	.. 03	.. 04
29	29 02	..	..	.. 04	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
30	30 ..	..	..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
31	31 15	..	..	.. 15	.. 15	.. 13	.. 16	.. 15	.. 16	.. 15	.. 14	.. 12	.. 14	.. 13	.. 11	.. 14	.. 14	.. 14	.. 11	.. 17	.. 17	.. 15	.. 18
*	6 55	6 73	6 16	4 54	4 89	4 78	5 30	4 93	4 62	4 92	4 74	4 01	4 25	4 22	3 86	4 50	5 20	4 40	3 57	4 34	4 03	3 87	4 50
+	30 13	30 84	30 07	24 90	27 39	27 05	30 06	28 07	23 71	25 72	25 75	23 03	23 82	24 46	22 26	24 65	26 27	23 77	20 43	23 32	22 85	22 30	24 85

\* The figures in this row give the totals for the month.

+ The totals from January 1st.

# Daily Rainfall.

Greenwich average 90 years (1815-1904) for October is 2.71 in., and from 1st January 20.08 in.

October, 1909.

Day of Mo.	Croydon (Avond.rd.)	Addington Hills	Addington (Pump.St.)	West Wickham	Hayes	Reston	Oryington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew.Wks.)	Wimbledon (The Downs)	Wimbledon (L.pold.rd.)	Haynes Park	New Malden	Worcester Park	Esher	West Molesey	Subbiton	Kingston (Sew.Wks.)
1	..	10	03	05	..	..	02	02	10	02	03	04	03	04	..	01	..	10	..	..	02	..	..	..	01	..
2	04	08	03	05	05	..	02	02	02	02	03	04	03	04	04	04	04	05	08	03	05	03	06	05	01	..
3	07	08	10	07	06	15	10	04	02	06	06	06	03	04	04	04	03	06	03	05	03	05	06	02	04	..
4	16	14	11	12	09	12	13	14	11	12	11	14	15	20	08	09	10	12	11	09	07	07	08	07	08	..
5	18	15	04	09	10	09	16	08	11	08	17	09	02	05	06	01	01	01	02	..	01	05	03	04	01	03
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	01	..	..	..	..	..	..	..	..	..	..	..
7	46	38	42	43	45	46	39	..	27	27	29	28	44	46	59	62	43	55	50	52	42	70	18	16	36	34
8	02	..	02	..	..	..	..	..	..	..	..	01	..	03	02	01	01	01	01	..	..	..	..	..	..	..
9	01	..	..	..	..	..	..	..	..	..	..	..	..	01	09	09	09	13	11	..	..	..	..	..	..	..
10	12	09	09	08	07	07	05	05	06	07	06	28	10	09	08	09	09	13	11	11	11	14	14	17	13	14
11	09	08	11	10	10	10	07	05	07	08	10	09	07	09	10	11	13	16	12	13	13	13	16	18	17	20
12	02	..	01	..	03	02	01	01	..	02	02	..	..	02	..	02	02	02	01	01	01	..	..	..	..	..
13	11	11	10	09	08	10	10	13	06	09	07	08	07	09	20	28	23	27	26	25	18	24	15	14	21	15
14	02	01	01	..	..	..	..	01	..	01	15	14	01	02	01	02	01	02	01	01	09	10	07	09	09	10
15	16	17	18	14	17	20	19	14	17	15	27	27	23	26	22	18	14	17	17	16	15	20	09	15	13	18
16	39	34	36	38	50	47	39	24	34	27	28	27	23	26	22	18	14	17	17	16	15	20	09	15	13	18
17	09	10	10	09	10	12	13	08	07	02	08	08	04	06	04	01	05	07	07	07	03	05	06	07	07	02
18	01	..	..	..	..	..	02	04	01	..	02	..	..	..	..	01	01	02	01	01	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	01	01	01	01	..	..	..	..	..	..
20	24	21	24	23	22	27	26	21	17	16	18	17	19	21	19	20	16	18	17	18	..	..	..	..	..	..
21	01	..	..	..	..	..	02	02	01	..	03	02	01	02	..	..	..	..	..	..	..	01	..	..	..	..
22	03	03	03	02	04	03	02	02	01	..	03	02	01	02	..	..	..	01	01	01	..	..	..	..	..	..
23	18	20	20	19	15	12	10	04	02	12	12	12	12	12	11	07	09	12	10	11	07	11	07	07	08	10
24	02	..	01	..	..	..	..	..	02	03	04	05	03	05	04	01	..	02	05	05	04	05	02	02	..	..
25	04	04	04	03	..	03	02	..	02	03	04	05	03	05	04	10	05	05	05	05	04	05	07	06	06	07
26	70	74	74	65	88	92	79	120	80	76	73	79	75	80	61	68	59	65	53	59	56	63	57	52	52	51
27	44	42	45	68	40	46	37	31	39	38	38	49	37	42	40	32	32	35	24	34	27	23	24	22	25	24
28	104	93	103	75	105	95	107	62	78	85	84	98	94	103	142	93	80	96	75	101	101	106	87	84	103	93
29	02	01	02	03	04	05	02	01	03	02	..	03	01	02	..	..	..	02	02	01	..	..	..	..	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
31	18	19	17	22	21	20	21	24	25	23	24	23	22	22	16	13	10	14	09	13	09	13	14	11	11	10
*	485	447	461	444	479	497	462	370	374	381	400	444	396	460	422	422	349	433	358	397	349	429	322	322	358	361
+	25.07	25.32	25.06	28.76	26.01	28.07	24.75	22.23	22.08	22.43	23.48	28.90	22.74	25.20	23.43	23.25	21.03	23.81	22.66	21.31	20.93	23.91	20.19	21.54	21.83	23.62

\* The figures in this row give the totals for the month.

† The totals from January 1st.

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putey Heath	Wandsworth.	Streatham	West Norwood	Upper Norwood	Forest Hill (Dartmrd.)	Forest Hill (Hon.O'rd.)	Forest Hill (Cemetery)	Willing- ton	Dartford	Eltham	Nunhead	East Dulwich	Brookwell Park	Clapham Park	Battersea Park	Battersea (Walewks)	Cambe'well (TheGreen)	Cambe'well (Leylonsq.)	Telegraph Hill	Greenwich	Deptford	Southwark Park		
1	·03	·01	·03	·01	·02	·03	·04	·07	·02	·04	·01	·02	·04	·01	·05	·04	·03	·09	·04	·09	·08	·08	·04	·06	·05	·07	IN.	
2	·06	·07	·05	·06	·11	·03	·04	·08	·05	·04	·05	·04	·04	·06	·06	·06	·06	·07	·06	·05	·06	·06	·04	·04	·03	·02	·07	IN.
3	·05	·06	·07	·07	·03	·08	·12	·11	·02	·14	·10	·12	·12	·11	·11	·14	·14	·17	·09	·07	·11	·08	·10	·20	·11	·10	·02	IN.
4	·10	·08	·08	·09	·03	·08	·01	·03	·18	·03	·02	·10	·05	·01	·09	·06	·08	·08	·12	·13	·01	·10	·09	·11	·10	·08	·08	IN.
5	·02	·09	·13	·14	·11	·02	·01	·03	·18	·03	·02	·10	·05	·01	·09	·06	·06	·08	·12	·13	·01	·10	·09	·11	·10	·08	·08	IN.
6	·09	·16	·18	·29	·41	·59	·65	·55	·49	·59	·55	·31	·25	·31	·59	·74	·74	·50	·34	·34	·42	·35	·60	·60	·64	·40	·40	IN.
7	·37	·16	·06	·04	·02	·01	·01	·04	·10	·12	·13	·07	·05	·13	·12	·10	·10	·07	·14	·10	·08	·09	·12	·12	·12	·12	·08	IN.
8	·01	·02	·06	·04	·01	·01	·13	·12	·10	·12	·13	·07	·05	·13	·12	·10	·10	·13	·16	·12	·12	·10	·10	·09	·09	·09	·08	IN.
9	·14	·16	·18	·12	·11	·09	·13	·12	·10	·12	·13	·07	·05	·13	·12	·10	·10	·13	·16	·12	·12	·10	·10	·09	·09	·09	·08	IN.
10	·19	·19	·22	·13	·14	·08	·11	·10	·02	·10	·04	·03	·05	·07	·11	·11	·11	·13	·16	·12	·12	·10	·10	·09	·09	·09	·08	IN.
11	·03	·01	·01	·02	·02	·15	·12	·04	·08	·01	·12	·07	·07	·06	·08	·25	·25	·24	·27	·22	·14	·25	·08	·10	·06	·22	IN.	
12	·19	·14	·14	·22	·27	·15	·02	·04	·10	·10	·12	·07	·07	·06	·08	·25	·25	·24	·27	·22	·14	·25	·08	·10	·06	·22	IN.	
13	·19	·14	·14	·22	·27	·15	·02	·04	·10	·10	·12	·07	·07	·06	·08	·25	·25	·24	·27	·22	·14	·25	·08	·10	·06	·22	IN.	
14	·19	·14	·14	·22	·27	·15	·02	·04	·10	·10	·12	·07	·07	·06	·08	·25	·25	·24	·27	·22	·14	·25	·08	·10	·06	·22	IN.	
15	·10	·11	·16	·14	·15	·11	·15	·16	·15	·16	·15	·15	·18	·23	·14	·17	·17	·16	·16	·15	·16	·16	·16	·21	·17	·16	IN.	
16	·12	·17	·16	·13	·12	·15	·20	·24	·13	·18	·17	·10	·23	·26	·12	·16	·16	·16	·16	·13	·14	·12	·12	·17	·14	·12	IN.	
17	·09	·04	·07	·06	·11	·03	·05	·06	·06	·04	·17	·19	·17	·05	·03	·05	·03	·06	·12	·06	·12	·06	·12	·17	·14	·12	IN.	
18	·01	·01	·01	·01	·01	·01	·01	·01	·03	·01	·01	·02	·03	·03	·03	·01	·01	·07	·02	·01	·01	·01	·02	·01	·01	·01	IN.	
19	·01	·01	·01	·01	·01	·01	·01	·02	·20	·02	·15	·15	·15	·17	·13	·24	·24	·15	·20	·17	·16	·12	·16	·17	·15	·14	IN.	
20	·15	·22	·22	·19	·16	·18	·19	·22	·20	·18	·15	·15	·15	·17	·13	·24	·24	·15	·20	·17	·16	·12	·16	·17	·15	·14	IN.	
21	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	IN.	
22	·01	·01	·01	·01	·01	·01	·01	·02	·19	·18	·09	·07	·09	·11	·08	·06	·06	·08	·10	·08	·07	·06	·10	·13	·13	·06	IN.	
23	·08	·06	·08	·10	·09	·06	·12	·17	·19	·18	·09	·07	·09	·11	·08	·06	·06	·08	·10	·08	·07	·06	·10	·13	·13	·06	IN.	
24	·05	·08	·08	·06	·06	·04	·05	·11	·05	·03	·01	·01	·01	·02	·01	·01	·06	·06	·07	·04	·04	·04	·02	·02	·02	·02	IN.	
25	·05	·60	·65	·59	·70	·75	·76	·80	·75	·67	·66	·92	·114	·96	·62	·83	·63	·67	·66	·58	·58	·54	·54	·78	·66	·48	IN.	
26	·27	·25	·28	·33	·35	·42	·38	·40	·35	·37	·41	·32	·40	·38	·34	·45	·45	·35	·46	·42	·39	·30	·30	·34	·38	·30	IN.	
27	·25	·75	·88	·91	·81	·81	·81	·83	·82	·76	·51	·66	·90	·64	·63	·95	·95	·83	·85	·84	·79	·71	·47	·72	·69	·70	IN.	
28	·05	·01	·01	·01	·02	·01	·02	·01	·05	·01	·01	·01	·02	·01	·01	·01	·01	·01	·01	·01	·02	·01	·02	·01	·01	·01	IN.	
29	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·02	·01	·02	·01	·01	·01	IN.	
30	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·01	·02	·01	·02	·01	·01	·01	IN.	
31	·09	·07	·06	·08	·15	·15	·17	·21	·19	·16	·10	·18	·20	·15	·10	·15	·13	·13	·10	·09	·11	·08	·08	·13	·11	·07	IN.	
*	3·63	3·39	3·89	3·85	3·99	3·79	4·16	4·44	4·00	3·98	3·27	3·56	4·22	3·77	3·45	4·65	4·65	3·91	4·19	3·81	3·44	3·28	3·17	4·06	3·67	3·18	IN.	
†	22·90	21·31	22·08	22·17	22·64	21·60	24·49	24·88	23·83	22·58	15·63	21·22	24·25	22·77	20·03	25·46	25·46	21·82	22·76	20·06	19·31	17·03	..	22·52	19·60	17·09	IN.	

\* The figures in this row give the totals for the month.

† The totals from January 1st.



**Daily Rainfall.** *Greenwich average 90 years (1815-1904) for November is 2.28 in., and from 1st January 22-36 in. November, 1909.*

[illegible]

\* The figures in this row give the totals for the month.

<sup>†</sup> The totals from January 1st.

Day of Mo.	Caterham (Reservoir)	Cherishing Park	Knoekholt (field gau.)	Knoekholt (tower ga.)	Chelsham	Warling-ham	Kenley (Hazelea)	Danstead (The Hall)	Danstead (Basing H.)	Burgh Heath	Epsum	Sanderstead (Leech rd.)	Purley (Hidd. rd.)	Purley (Pump-St.)	Sutton (Waterw.)	Sutton (Sew. Wks.)	Benhillton	Carshalton	Wallington	Beddington (Boxley L.)	Beddington (Liverside)	Beddington (Sew. Fm.)	Croydon (Wm. N. rd.)	Croydon (Web. rd.)	Croydon (Park H. R.)	Croydon (Croydon H.)
1	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
+	31.46	32.03	28.82	25.61	30.29	31.35	25.92	28.45	28.06	31.39	29.08	24.68	26.84	26.87	23.90	24.73	25.58	22.90	25.72	27.47	24.69	21.21	24.30	23.67	23.08	25.96

\* The figures in this row give the totals for the month.

† The totals from January 1st.

# **Daily Rainfall.**

*Greenwich average 90 years (1815-1904) for November is 2.28 in., and from 1st January 22.36 in.*

**November, 1909.**

Day of Mo.	Croydon (Avondale)	Addington Hills	Addington (Pump. St.)	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon (L. Pold.)	Raynes Park	New Malden	Worcester Park	Fisher	West Molesey	Surbiton	Kingston (Sew. Wks.)
1	.02	.02	.01	.01	.04	.02	.03	.01	.01	.02	.04	.03	.02	.01	.01	.02	.01	.01	.01	.01	.05	.01	.01	.01	.02
2	.04	.03	.03	.02	.03	.02	.03	.01	.01	.03	.02	.03	.02	.03	.01	.03	.01	.02	.01	.01	.05	.01	.01	.01	.01
3	.02	.01	.01	.01	.03	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
4	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
5	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
6	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
7	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
8	.02	.02	.01	.01	.02	.02	.02	.01	.01	.01	.05	.02	.01	.02	.02	.02	.02	.02	.04	.05	.08	.04	.04	.06	.09
9	.02	.02	.01	.03	.02	.02	.02	.01	.01	.02	.02	.02	.01	.03	.04	.01	.01	.02	.01	.05	.08	.04	.04	.06	.01
10	.04	.03	.02	.02	.04	.02	.03	.02	.01	.03	.02	.02	.01	.03	.04	.01	.02	.05	.04	.05	.08	.04	.04	.06	.09
11	.02	.02	.02	.02	.03	.03	.07	.02	.04	.01	.01	.02	.05	.03	.01	.01	.01	.03	.03	.07	.12	.02	.02	.01	.01
12	.09	.08	.09	.10	.03	.09	.09	.02	.04	.02	.02	.02	.01	.03	.03	.12	.02	.04	.07	.12	.08	.03	.04	.04	.18
13	.09	.11	.14	.17	.22	.25	.21	.31	.22	.26	.26	.20	.10	.08	.22	.09	.17	.16	.12	.14	.15	.18	.14	.16	.04
14	.14	.11	.14	.17	.22	.25	.21	.31	.22	.26	.26	.20	.10	.08	.22	.09	.17	.16	.12	.14	.15	.18	.14	.16	.04
15	.08	.08	.08	.09	.09	.09	.10	.07	.05	.06	.06	.07	.03	.05	.01	.01	.09	.03	.02	.01	.06	.05	.05	.05	.06
16	.06	.04	.04	.05	.05	.05	.04	.03	.05	.05	.06	.07	.03	.06	.04	.05	.09	.05	.07	.05	.06	.05	.05	.05	.06
17	.11	.10	.09	.10	.12	.21	.07	.08	.08	.07	.11	.06	.04	.06	.04	.07	.03	.06	.04	.05	.09	.04	.02	.10	.02
18	.02	.01	.01	.01	.01	.02	.03	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.03	.03	.05	.09	.01	.02	.10	.02
19	.02	.01	.01	.01	.01	.02	.03	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.03	.03	.05	.09	.01	.02	.10	.02
20	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.03	.03	.05	.09	.01	.02	.10	.02
21	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.03	.03	.05	.09	.01	.02	.10	.02
22	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.03	.03	.05	.09	.01	.02	.10	.02
23	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.03	.03	.05	.09	.01	.02	.10	.02
24	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.03	.03	.05	.09	.01	.02	.10	.02
25	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.03	.03	.05	.09	.01	.02	.10	.02
26	.04	.04	.04	.05	.03	.05	.03	.02	.04	.05	.07	.05	.01	.05	.06	.04	.03	.06	.05	.04	.06	.04	.04	.04	.05
27	.04	.04	.04	.05	.03	.05	.03	.02	.04	.05	.07	.05	.01	.05	.06	.04	.03	.06	.05	.04	.06	.04	.04	.04	.05
28	.01	.01	.01	.01	.07	.35	.27	.01	.01	.01	.02	.02	.01	.01	.39	.39	.50	.45	.39	.43	.35	.02	.01	.01	.01
29	.35	.33	.35	.38	.28	.35	.27	.20	.25	.28	.26	.35	.33	.36	.39	.39	.50	.45	.39	.43	.35	.02	.01	.01	.01
30	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
*	1.11	.95	.94	1.02	1.00	1.01	1.05	.81	.79	.90	1.07	1.00	.72	.97	.89	.89	.92	1.03	.85	.80	.90	.80	.53	.88	.98
+	26.18	26.27	26.00	29.78	27.01	29.08	25.90	23.04	23.77	23.33	24.55	29.90	23.46	26.17	24.32	24.14	21.05	24.84	23.76	21.73	24.81	20.99	22.07	22.71	24.60

\* The figures in this row give the totals for the month.

+ The totals from January 1st.



Day of Mo.	Kingston (County H.)	Richmond	Kew	Putney Heath	Wandsworth	Common	Streatham	West Norwood	Upper Norwood	Forest Hill (Parish rd.)	Forest Hill (Hon. Ord.)	Forest Hill (Cemetery)	Wilmington	Dartford	Eltham	Nunhead	East Dulwich	Brockwell Park	Clapham Park	Battersea Park	Battersea (Valencek.)	Cambe well (The Green)	Cambe well (Leylonsq.)	Telegraph Hill	Greenwich	Deptford	Southwark Park
1																											
2																											
3																											
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*																											
†																											

\* The figures in this row give the totals for the month.

† The totals from January 1st.

## NOTES.

NOVEMBER, 1909.

THE month has been cold, sunny, dry, and foggy. Since 1884 there have only been three colder Novembers, *viz.*, in 1887, 1896, and 1901, and only three more sunny ones, *viz.*, in 1894, 1898, and 1908. The rainfall is only about thirty-nine per cent. of the average. Fogs and hoar frosts occurred on many days, the 3rd being especially foggy, and there were snow showers in some parts of the district on the 14th, 15th, 16th, and 23rd. A brilliant display of sheet lightning was observed at South Nutfield and Epsom on the 30th. A rainbow was seen at Beddington on the 17th. Solar haloes were seen at Greenwich on the 11th, and 16th, and at Epsom on the 11th; and lunar haloes at Greenwich and Epsom on the 27th, 28th, and 30th, at Benhilton and Croydon (Waddon New Road) on the 27th and 28th, and at Purley (Riddlesdown Road) on the 30th. A sun-pillar was seen at Epsom on the 11th. The observer at Redhill remarks: "Primroses have been in blossom since the early part of the month, and during the last five or six days the young thrushes and blackbirds have been trying their notes." The month has, as may be expected, been an unhealthy one, scarlet fever, erysipelas, and diphtheria being rather prevalent, and colds, influenza, and whooping cough especially so. The mean temperature of the month is about three degrees below the average, both day and night temperatures being low, and was at Wallington  $41^{\circ}2$ , at Croydon (Park Hill House) and Worcester Park  $40^{\circ}9$ , at Warlingham  $39^{\circ}8$ , and at Epsom  $39^{\circ}7$ . At Croydon (Park Hill House) percolation was 0.973 in., and, though going on during the whole month, was much under the average, and evaporation, 0.500 in., was slightly over the average. There were recorded at Wallington 70.1 hours of sunlight, which is 19.2 hours, or seven per cent., above the November average of the twenty years 1886-1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

Hon. Sec.

WALLINGTON, SURREY, 14th December, 1909.

## NOTES.

DECEMBER, 1909.

THE month has been warm, wet, and very changeable. There have been two specially sudden rises in temperature, *viz.* (1) between the 10th and 11th, when at Wallington it rose  $13^{\circ}3$  between 9 a.m. on the 10th and 9 a.m. on the 11th, and at Benhilton, between the same times,  $15^{\circ}$ ; and (2) between 9 a.m. on the 21st and 9 a.m. on the 22nd it rose at  $27^{\circ}9$  at Wallington,  $28^{\circ}$  at Benhilton, and  $30^{\circ}5$  at Epsom. The month has been very unhealthy, influenza and catarrh being prevalent. The rainfall has also been heavy, and varies from about half an inch at Greenwich to one inch at Croydon above the average. The mean temperature varies from about  $1^{\circ}$  to  $0^{\circ}4$  above the average, and was at Wallington  $40^{\circ}1$ , at Worcester Park  $39^{\circ}9$ , at Epsom  $39^{\circ}4$ , at Croydon (Park Hill House)  $39^{\circ}3$ , and at Warlingham  $38^{\circ}7$ . Snow fell on the 6th, 15th, 16th, 19th, 21st, and 25th, and sheet lightning was seen on the 3rd, 5th, 6th, and 31st in some parts of the district. Solar haloes were seen at Greenwich on the 6th, and 29th, and parhelion on the 4th and 6th; and at Epsom solar haloes alone on the 4th and 21st. Lunar haloes were observed at Greenwich on the 21st, 22nd, 25th, and 29th, at Epsom on the 20th, 21st, 22nd, and 25th—on the latter date with paraselenæ and three subsidiary haloes, at Purley on the 20th and 25th, at Betchworth on the 20th, at Beddington on the 25th, and at Nutfield on the 26th. There were many hoar frosts. At Wallington the rainfall has only been exceeded in December five times since 1881, and the number of rainy days has not been surpassed. At Keston and Beddington a rainbow was seen at midday on the 25th. The observer at Keston remarks on the many crossbills seen in the district. At Croydon (Park Hill House) percolation was  $3\cdot206$  in., which is about double the average, and evaporation was  $0\cdot485$  in., which was nearly double the average. There were recorded at Wallington  $45\cdot4$  hours of sunlight, which is  $7\cdot6$  hours, or three per cent. above the December average of the twenty years 1886–1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,

*Hon. Sec.*

WALLINGTON, SURREY, 22nd January, 1910.



# Daily Rainfall. Greenwich average 90 years (1815-1904) for December is 1.96 in., and from 1st January 24.32 in.

December, 1909.

Day of Mo.	Holmbury St. Mary	Abinger (Reclory)	Abinger (The Hall)	Dorking (Dingles)	Betchworth	Buckland	Beigate	Redhill	Nutfield (old gauge)	Nutfield (new gauge)	South Nutfield	Outwood	Betsom Hill	Sevenoaks	Westernham (Hill Est.)	Westernham (Town)	Merstham	Upper Gatton	Walton-on- the-Hill	Hedley	Leather- head	D'Abernon Chase	Ashstead	Chipstead	Chaldon	Caterham (Asylum)
1	20	32	31	22	21	28	23	26	29	29	28	28	30	36	27	27	IN.	38	24	24	24	23	20	07	28	IN.
2	65	49	46	50	54	67	50	68	58	61	60	56	81	80	71	82	IN.	64	71	54	45	30	43	60	67	72
3	14	53	60	46	37	42	37	40	33	37	46	22	34	59	38	39	IN.	35	34	46	44	37	42	46	36	45
4	04	05	03	05	03	04	10	03	12	10	06	32	48	15	20	10	IN.	08	07	25	01	01	11	07	07	04
5	16	15	17	17	03	23	15	19	22	22	20	19	11	28	25	30	IN.	17	20	25	18	12	17	17	19	21
6	19	16	12	08	11	12	11	15	13	14	15	16	10	10	08	11	IN.	16	03	16	07	05	11	14	10	11
7	..	..	..	..	01	..	..	..	01	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
8	..	..	..	..	..	..	..	..	01	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
9	04	07	09	08	07	03	09	04	04	03	04	03	05	03	06	04	IN.	08	..	11	06	06	09	06	05	03
10	42	30	31	19	17	16	18	24	13	13	16	16	34	34	34	31	IN.	28	55	21	14	14	15	26	35	38
11	04	03	04	05	02	02	03	01	01	01	01	02	11	02	01	01	IN.	02	04	..	02	01	01	01	01	01
12	06	07	08	08	07	06	07	06	08	08	07	07	08	08	08	08	IN.	09	06	13	08	05	08	07	08	08
13	..	..	..	..	..	..	..	..	..	..	..	..	08	01	01	..	IN.	..	..	..	..	..	..	..	..	01
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
15	16	11	12	09	08	03	02	11	08	09	05	07	06	02	05	04	IN.	06	01	09	05	03	04	..	05	09
16	29	29	26	32	25	32	40	25	22	21	23	18	21	43	21	23	IN.	28	33	31	28	20	25	07	20	17
17	50	38	50	61	52	34	36	33	29	28	30	30	32	32	32	32	IN.	29	40	42	43	38	40	27	27	31
18	..	..	..	..	..	..	..	..	..	..	05	05	07	10	..	..	IN.	10	..	..	03	04	05	09	07	05
19	09	10	11	08	08	08	34	06	08	09	05	05	..	10	..	..	IN.	..	08	..	03	04	05	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
21	87	83	95	100	80	72	34	69	50	63	60	73	58	70	60	66	IN.	74	75	90	93	64	72	76	68	65
22	23	14	18	13	09	08	11	13	04	04	04	06	06	08	05	04	IN.	29	13	11	07	05	10	10	07	07
23	24	24	21	25	28	24	24	18	19	20	22	21	30	16	19	21	IN.	21	21	17	16	13	15	23	18	25
24	04	..	07	05	..	01	..	04	..	..	15	13	22	07	..	..	IN.	13	..	..	12	05	30	05	08	05
25	16	17	12	11	12	13	13	12	12	12	15	13	22	13	14	18	IN.	02	14	16	12	05	30	08	15	10
26	03	..	..	02	01	01	02	01	02	01	03	03	..	03	03	02	IN.	02	10	09	02	01	05	01	02	01
27	15	10	11	11	08	08	08	11	07	10	15	11	17	12	..	14	IN.	10	10	09	03	04	06	10	13	14
28	..	..	..	..	..	..	..	..	01	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	IN.	..	..	..	..	..	..	..	..	..
30	02	..	01	03	01	01	..	01	01	01	..	..	..	01	01	01	IN.	02	..	..	..	..	..	..	..	01
31	..	02	..	..	04	01	02	01	02	02	01	02	09	02	05	07	IN.	01	02	..	..	..	..	03	04	02
*	502	457	485	468	416	409	389	411	361	386	386	390	469	494	404	441	IN.	440	441	435	382	296	373	370	410	428
+	35.17	35.24	38.74	37.69	33.94	30.43	31.23	32.80	31.37	31.53	28.21	27.69	37.14	34.35	33.00	34.46	IN.	34.25	33.11	35.70	32.34	28.41	30.42	32.60	32.90	33.54

\* The figures in this row give the totals for the month.

† The totals from January 1st.

RECORD CEASED.

**Daily Rainfall.**

*Greenwich average 90 years (1815-1904) for December is 1.96 in., and from 1st January 24.32 in.*

**December, 1909**

Day of Mo.	MONTHLY GAUGE.																										
	Galerham (Reservoir)	Chevening Park	Knockholt (field ga.)	Knockholt (tower ga.)	Chelsham	Walling- ham	Kenley (Hazelea)	Banstead (The Hall)	Banstead H. (Basing H.)	Burgh Heath	Epsom	Sanderst. (Beech, rd.)	Purley (Ridgl, rd.)	Purley (Pump, St.)	Sutton (Waterwk.)	Sutton (Sew. Wks.)	Benlilton	Carshalton	Wallington	Beddington (Foxley L.)	Beddington (Riverside)	Beddington (Sew. Fm.)	Croydon (Wm. N. rd.)	Croydon (Wob. rd.)	Croydon (Park H. R.)	Croydon (Pk. H. Ho.)	
1	IN. 32	IN. 33	IN. 26	IN. 23	IN. 18	IN. 29	IN. 18	IN. 23	IN. 18	IN. 21	IN. 28	IN. 21	IN. 18	IN. 20	IN. 19	IN. 20	IN. 19	IN. 30	IN. 19	IN. 20	IN. 19	IN. 19	IN. 19	IN. 18	IN. 17	IN. 20	IN. 20
2	IN. 73	IN. 81	IN. 78	IN. 62	IN. 45	IN. 45	IN. 45	IN. 49	IN. 42	IN. 42	IN. 45	IN. 49	IN. 55	IN. 41	IN. 30	IN. 34	IN. 38	IN. 38	IN. 38	IN. 48	IN. 38	IN. 46	IN. 41	IN. 36	IN. 39	IN. 44	IN. 44
3	IN. 28	IN. 48	IN. 15	IN. 13	IN. 11	IN. 43	IN. 12	IN. 40	IN. 40	IN. 40	IN. 25	IN. 49	IN. 55	IN. 17	IN. 30	IN. 34	IN. 33	IN. 62	IN. 37	IN. 47	IN. 32	IN. 34	IN. 38	IN. 34	IN. 31	IN. 42	IN. 42
4	IN. 16	IN. 13	IN. 55	IN. 50	IN. 17	IN. 26	IN. 12	IN. 03	IN. 03	IN. 03	IN. 20	IN. 26	IN. 36	IN. 14	IN. 07	IN. 16	IN. 16	IN. 05	IN. 06	IN. 17	IN. 17	IN. 14	IN. 20	IN. 16	IN. 16	IN. 19	IN. 08
5	IN. 26	IN. 09	IN. 11	IN. 11	IN. 13	IN. 12	IN. 17	IN. 24	IN. 10	IN. 06	IN. 07	IN. 19	IN. 20	IN. 10	IN. 15	IN. 06	IN. 06	IN. 07	IN. 10	IN. 12	IN. 10	IN. 07	IN. 09	IN. 08	IN. 08	IN. 08	IN. 08
6	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17
7	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17
8	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17	IN. 17
9	IN. 03	IN. 03	IN. 10	IN. 08	IN. 08	IN. 04	IN. 07	IN. 15	IN. 08	IN. 15	IN. 08	IN. 02	IN. 03	IN. 05	IN. 05	IN. 08	IN. 06	IN. 04	IN. 04	IN. 06	IN. 04	IN. 03	IN. 05	IN. 03	IN. 02	IN. 02	IN. 05
10	IN. 35	IN. 25	IN. 29	IN. 15	IN. 15	IN. 34	IN. 15	IN. 20	IN. 18	IN. 20	IN. 18	IN. 15	IN. 18	IN. 18	IN. 11	IN. 12	IN. 12	IN. 08	IN. 02	IN. 20	IN. 11	IN. 05	IN. 10	IN. 09	IN. 09	IN. 11	IN. 09
11	IN. 02	IN. 02	IN. 02	IN. 02	IN. 02	IN. 03	IN. 02	IN. 09	IN. 02	IN. 02	IN. 03	IN. 02	IN. 03	IN. 01	IN. 01	IN. 01	IN. 01	IN. 03	IN. 02	IN. 03	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 01	IN. 02
12	IN. 08	IN. 08	IN. 08	IN. 09	IN. 09	IN. 09	IN. 08	IN. 09	IN. 06	IN. 09	IN. 07	IN. 07	IN. 07	IN. 08	IN. 04	IN. 03	IN. 04	IN. 03	IN. 05	IN. 06	IN. 06	IN. 02	IN. 06	IN. 05	IN. 04	IN. 07	IN. 07
13	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14	IN. 14
14	IN. 07	IN. 05	IN. 30	IN. 25	IN. 25	IN. 06	IN. 33	IN. 33	IN. 05	IN. 33	IN. 05	IN. 01	IN. 02	IN. 08	IN. 28	IN. 25	IN. 25	IN. 07	IN. 04	IN. 21	IN. 16	IN. 02	IN. 03	IN. 14	IN. 12	IN. 16	IN. 16
15	IN. 18	IN. 15	IN. 36	IN. 32	IN. 32	IN. 16	IN. 31	IN. 31	IN. 25	IN. 31	IN. 34	IN. 32	IN. 45	IN. 35	IN. 30	IN. 30	IN. 30	IN. 50	IN. 36	IN. 37	IN. 33	IN. 28	IN. 38	IN. 33	IN. 32	IN. 33	IN. 33
16	IN. 31	IN. 41	IN. 41	IN. 36	IN. 36	IN. 33	IN. 31	IN. 31	IN. 31	IN. 31	IN. 31	IN. 32	IN. 45	IN. 35	IN. 30	IN. 30	IN. 30	IN. 50	IN. 36	IN. 37	IN. 33	IN. 28	IN. 38	IN. 33	IN. 32	IN. 33	IN. 33
17	IN. 06	IN. 08	IN. 08	IN. 08	IN. 08	IN. 08	IN. 07	IN. 07	IN. 06	IN. 07	IN. 06	IN. 06	IN. 07	IN. 09	IN. 03	IN. 02	IN. 03	IN. 03	IN. 04	IN. 08	IN. 04	IN. 02	IN. 05	IN. 04	IN. 04	IN. 05	IN. 05
18	IN. 49	IN. 59	IN. 68	IN. 35	IN. 35	IN. 66	IN. 47	IN. 75	IN. 70	IN. 75	IN. 70	IN. 61	IN. 68	IN. 62	IN. 58	IN. 49	IN. 53	IN. 52	IN. 59	IN. 66	IN. 56	IN. 44	IN. 58	IN. 50	IN. 45	IN. 36	IN. 36
19	IN. 07	IN. 08	IN. 06	IN. 05	IN. 05	IN. 07	IN. 14	IN. 12	IN. 05	IN. 12	IN. 05	IN. 09	IN. 10	IN. 06	IN. 03	IN. 06	IN. 03	IN. 04	IN. 04	IN. 20	IN. 05	IN. 07	IN. 06	IN. 07	IN. 05	IN. 04	IN. 04
20	IN. 26	IN. 17	IN. 25	IN. 12	IN. 12	IN. 26	IN. 18	IN. 12	IN. 13	IN. 12	IN. 13	IN. 22	IN. 26	IN. 22	IN. 09	IN. 08	IN. 09	IN. 05	IN. 15	IN. 10	IN. 15	IN. 04	IN. 12	IN. 09	IN. 13	IN. 10	IN. 10
21	IN. 15	IN. 15	IN. 19	IN. 11	IN. 11	IN. 05	IN. 03	IN. 13	IN. 04	IN. 13	IN. 03	IN. 01	IN. 22	IN. 11	IN. 03	IN. 02	IN. 03	IN. 05	IN. 03	IN. 05	IN. 07	IN. 03	IN. 09	IN. 02	IN. 04	IN. 04	IN. 04
22	IN. 02	IN. 05	IN. 19	IN. 11	IN. 11	IN. 03	IN. 08	IN. 09	IN. 01	IN. 13	IN. 04	IN. 08	IN. 10	IN. 11	IN. 03	IN. 05	IN. 03	IN. 05	IN. 04	IN. 08	IN. 07	IN. 03	IN. 09	IN. 02	IN. 04	IN. 06	IN. 06
23	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
24	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
25	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
26	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
27	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
28	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
29	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
30	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
31	IN. 14	IN. 13	IN. 11	IN. 05	IN. 05	IN. 15	IN. 07	IN. 08	IN. 06	IN. 08	IN. 06	IN. 07	IN. 08	IN. 07	IN. 06	IN. 03	IN. 06	IN. 01	IN. 06	IN. 10	IN. 07	IN. 06	IN. 06	IN. 05	IN. 05	IN. 05	IN. 05
*	4.18	4.14	4.16	3.05	4.20	4.47	3.53	3.74	3.69	3.88	3.42	3.37	3.88	3.67	2.81	2.86	2.77	2.59	3.09	3.74	2.97	2.22	3.08	2.70	2.67	3.36	3.36
†	35.64	36.17	32.98	28.66	34.49	35.82	29.45	32.19	31.75	35.27	32.50	28.05	30.72	30.54	26.71	27.59	28.15	25.49	28.81	31.21	27.66	23.43	27.38	26.37	25.75	29.32	29.32

\* The figures in this row give the totals for the month.

† The totals from January 1st.

# Daily Rainfall.

Greenwich average 90 years (1815-1904) for December is 1·96 in., and from 1st January 24·32 in.

December, 1909.

Day of Mo.	Croydon (Avondale rd.)	Addington Hills	Addington (Pump St.)	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Common	Beckenham	Anerley	South Norwood	Beddington Corner	Lower Tooting	Wimbledon (Sew. Wks.)	Wimbledon (The Downs)	Wimbledon (Upfold rd.)	Raynes Park	New Malden	Park Worcester	Esher	West Molesey	Surbiton	Kingston (Sew. Wks.)
1	19	19	23	25	23	23	20	13	20	20	22	20	18	21	20	17	16	19	18	18	15	21	20	20	18	18
2	46	47	58	66	50	61	53	48	43	38	41	47	39	38	41	36	37	39	40	36	31	36	34	38	37	46
3	36	35	43	55	53	26	40	33	33	40	39	32	24	33	28	31	27	32	33	31	34	35	44	41	38	40
4	10	12	15	12	04	37	20	18	14	07	10	16	11	06	06	05	07	06	05	05	02	15	10	03	01	03
5	19	17	15	10	10	15	16	22	13	09	12	12	11	13	12	11	11	16	12	15	08	13	07	08	09	08
6	07	06	06	06	07	06	04	02	03	05	06	10	07	08	06	04	05	06	05	06	05	10	07	05	07	09
7	01	..	..	..	02	..	..	..	03	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	09
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	09
9	04	03	02	02	03	..	..	06	01	04	03	05	02	05	07	05	05	07	06	07	05	07	05	04	05	06
10	15	12	13	09	10	18	20	10	13	09	09	10	01	12	08	11	11	11	12	10	10	17	12	10	13	13
11	02	01	..	..	03	03	02	01	01	01	02	02	01	02	08	01	01	02	02	01	10	17	12	10	13	13
12	06	06	06	06	05	08	07	03	06	06	05	07	04	06	03	04	03	05	04	03	..	04	04	03	04	02
13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	04	02	02	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	04	02	02	04	03	04	02	02	02	03	01	04	02	02	03	..	..	..	..	..
16	15	14	15	25	17	23	23	20	18	20	21	20	14	15	21	22	23	26	24	26	26	25	23	25	23	25
17	32	30	35	40	33	36	34	22	34	30	29	32	28	31	37	21	20	27	22	27	26	31	22	26	25	28
18	..	..	..	..	08	03	05	..	02	05	02	..	..	03	04	02	03	06	05	04	04	05	..	04	05	01
19	06	06	08	09	08	03	05	04	02	05	05	..	02	03	04	02	03	06	05	04	04	05	..	04	05	01
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	61	54	52	60	50	60	48	40	48	41	44	49	39	44	52	33	27	35	31	35	31	45	36	23	35	36
22	07	05	04	03	09	08	06	03	03	06	05	08	03	05	06	05	02	03	03	04	02	09	05	01	05	03
23	19	20	22	22	16	31	16	12	15	13	15	03	02	03	05	12	10	11	11	09	11	07	11	09	11	17
24	03	..	02	..	..	..	02	..	06	02	09	07	04	05	03	06	04	03	03	..	05	04	03	02	02	02
25	06	08	08	10	08	11	07	06	06	05	09	07	01	05	03	01	04	02	04	07	05	04	04	03	05	02
26	01	..	..	..	..	01	07	06	05	06	02	07	05	07	10	06	06	07	07	06	06	08	06	06	07	13
27	08	07	07	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	02	01	..	..	..	..	..	..	..	..	..	..	..	02	02	..	01	02	01	..	..	..	..	..	..	..
31	04	07	05	06	06	05	02	05	01	..	03	06	04	06	04	04	04	05	04	04	01	03	02	01	01	03
*	333	314	342	373	331	387	336	280	285	272	292	309	237	278	277	241	226	281	254	257	225	280	246	236	252	287
+	29·51	29·41	29·42	33·51	30·32	32·95	29·16	25·84	26·62	26·05	27·47	32·99	25·83	28·95	27·09	26·55	24·21	27·65	26·30	24·73	23·98	27·61	23·45	24·43	25·23	27·47

\* The figures in this row give the totals for the month.

+ The totals from January 1st.

The figures in this row give the totals for the month.



# Daily Rainfall.

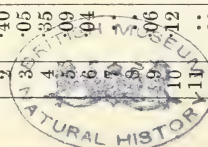
Greenwich average 90 years (1815-1904) for December is 1.96 in., and from 1st January 24.32 in.

December, 1909.

Day of Mo.	Kingston (County H.)	Richmond	Kew	Putney Heath	Wandsworth.	Streatham	West Norwood	Upper Norwood	Forest Hill (Dartm. rd.)	Forest Hill (Hon. O. rd.)	Forest Hill (Cemetery)	Willesden	Dartford	Eltham	Nunhead	East Dulwich	Brookwell Park	Clapham Park	Battersea Park	Battersea (Waterw. k.)	Cambe'well (The Green)	Cambe'well (Leylonsq.)	Telegraph Hill	Greenwich	Deptford	Southwark Park
1	IN. 1.19	IN. 1.17	IN. 2.21	IN. 2.26	IN. 2.18	IN. 2.16	IN. 2.19	IN. 2.20	IN. 2.23	IN. 2.22	IN. 2.05	IN. 1.15	IN. 1.14	IN. 2.25	IN. 2.21	IN. 2.22	IN. 1.17	IN. 1.12	IN. 2.20	IN. 2.30	IN. 2.20	IN. 2.20	IN. 2.20	IN. 2.23	IN. 2.22	IN. 2.21
2	IN. 2.40	IN. 2.30	IN. 2.40	IN. 2.36	IN. 2.31	IN. 2.30	IN. 2.39	IN. 2.40	IN. 2.34	IN. 2.37	IN. 2.40	IN. 2.50	IN. 2.69	IN. 2.48	IN. 2.48	IN. 2.30	IN. 2.40	IN. 2.31	IN. 2.28	IN. 2.32	IN. 2.30	IN. 2.28	IN. 2.34	IN. 2.40	IN. 2.44	IN. 2.40
3	IN. 2.05	IN. 2.39	IN. 2.35	IN. 2.35	IN. 2.22	IN. 2.25	IN. 2.25	IN. 2.24	IN. 2.32	IN. 2.22	IN. 2.26	IN. 2.33	IN. 2.48	IN. 2.37	IN. 2.35	IN. 2.35	IN. 2.31	IN. 2.36	IN. 2.30	IN. 2.30	IN. 2.25	IN. 2.26	IN. 2.23	IN. 2.24	IN. 2.28	IN. 2.28
4	IN. 2.09	IN. 2.08	IN. 2.09	IN. 2.05	IN. 2.16	IN. 2.04	IN. 2.06	IN. 2.09	IN. 2.11	IN. 2.11	IN. 2.02	IN. 2.16	IN. 2.15	IN. 2.16	IN. 2.12	IN. 2.11	IN. 2.15	IN. 2.13	IN. 2.05	IN. 2.15	IN. 2.13	IN. 2.09	IN. 2.08	IN. 2.10	IN. 2.09	IN. 2.09
5	IN. 2.04	IN. 2.08	IN. 2.07	IN. 2.07	IN. 2.05	IN. 2.10	IN. 2.07	IN. 2.08	IN. 2.11	IN. 2.05	IN. 2.04	IN. 2.01	IN. 2.02	IN. 2.03	IN. 2.03	IN. 2.05	IN. 2.05	IN. 2.05	IN. 2.03	IN. 2.03	IN. 2.02	IN. 2.02	IN. 2.03	IN. 2.07	IN. 2.05	IN. 2.02
6	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01
7	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06	IN. 2.06
8	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12	IN. 2.12
9	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01
10	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
11	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01
12	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
13	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01
14	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01	IN. 2.01
15	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
16	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
17	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
18	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
19	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
20	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
21	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
22	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
23	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
24	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
25	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
26	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
27	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
28	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
29	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
30	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
31	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03	IN. 2.03
*	2.56	2.28	2.56	2.53	2.51	2.07	2.53	2.54	2.12	2.29	1.43	2.57	3.22	2.79	2.10	2.52	2.16	1.68	2.05	1.76	1.66	1.82	2.40	2.22	1.84	
†	26.36	24.29	25.46	25.54	25.93	24.40	27.88	28.18	26.76	25.63	17.87	24.51	28.50	26.27	22.91	29.01	24.97	25.19	22.79	21.94	19.42	..	25.71	22.47	19.61	

\* The figures in this row give the totals for the month.

† The totals from January 1st.



15 JUL 1910

INDEX  
TO THE  
PROCEEDINGS & TRANSACTIONS  
OF THE  
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NATURAL HISTORY AND SCIENTIFIC  
SOCIETY.

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VOLUME VI. 1903-1909.

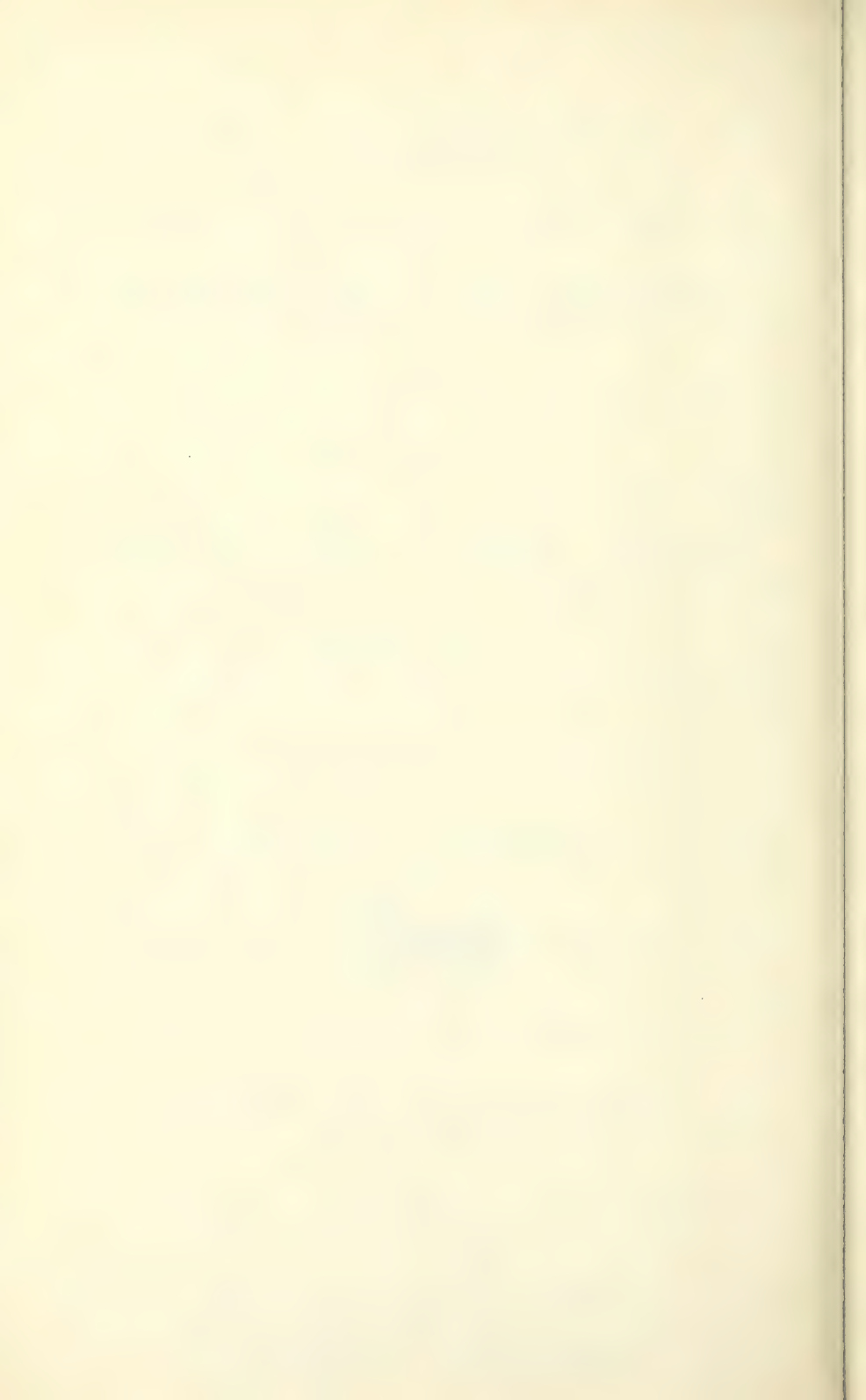


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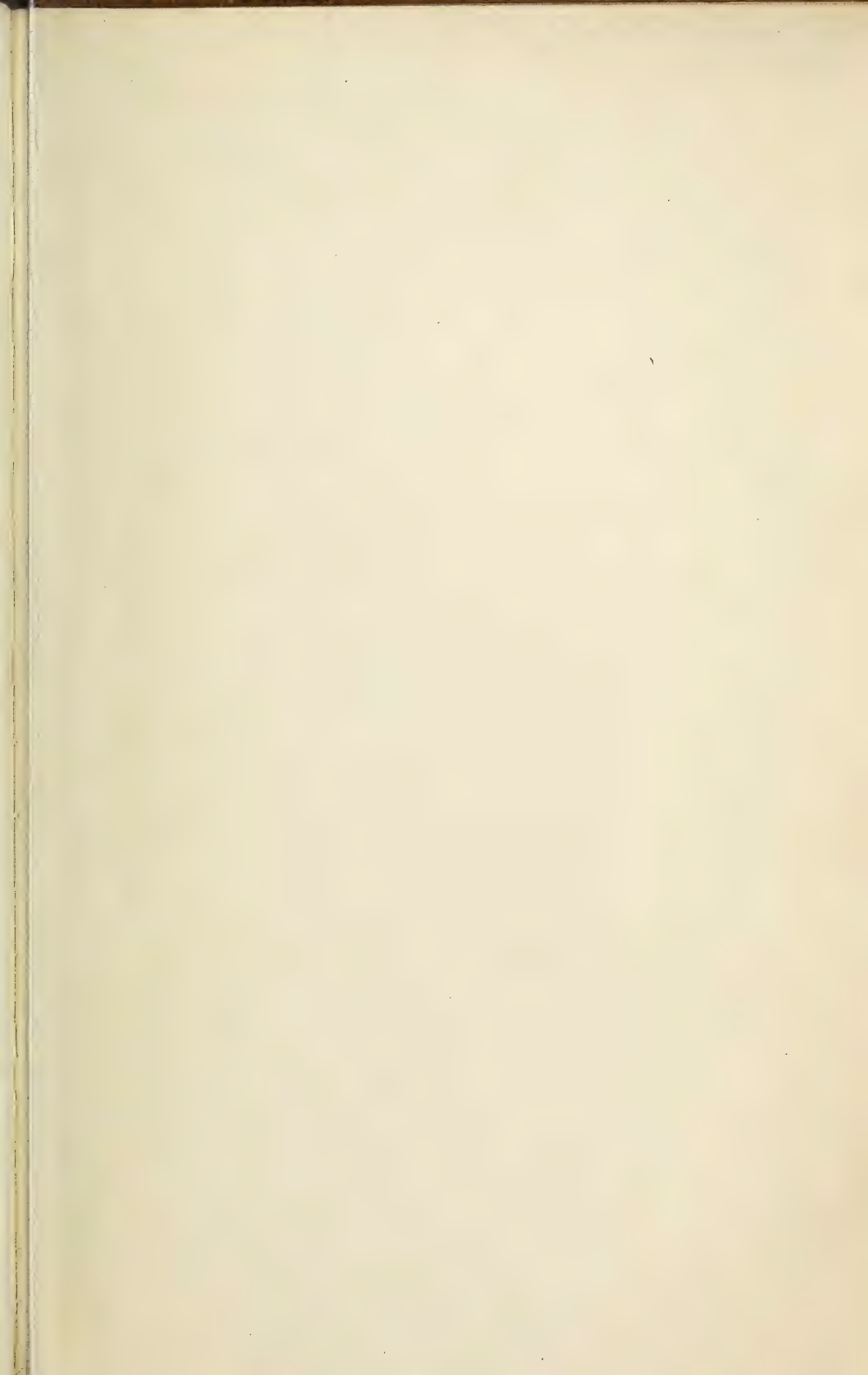
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